Volunteer Firemen

JULY 1944

NATIONAL FIRE PROTECTION ASSOCIATION INTERNATIONAL
60 Batterymarch Street Boston 10, Massachusetts

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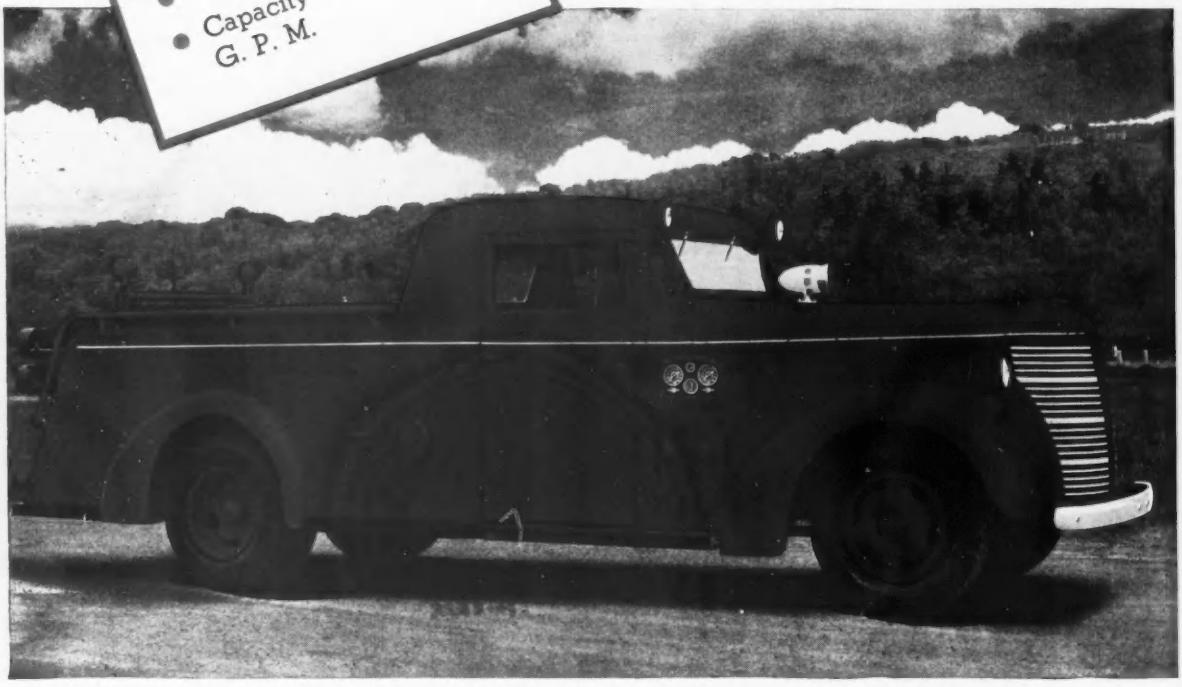
THE *Evolution* OF A PUMPER

This AMERICAN-LAFRANCE pumper of yesterday was operated with ten men on each side—

- Hand drawn
- Hand operated
- Capacity 300 to 400 G. P. M.

is graphically illustrated by these two photographs. The last 40 years have brought important changes from the hand drawn, hand operated pumper—to the hand and horse drawn steamer—to the modern motorized pumper of today.



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- Factory built
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Centraflow pumps also available for commercial chassis equipment.

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Malleable iron couplings have our piston ring swiveling feature.

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ROCKERLUG has maintained this position throughout the more than 19 years since it was introduced by Akron Brass. The popularity of ROCKERLUG in the fire fighting field has grown each year until today more than 90 per cent of the municipalities of the United States have standardized on genuine ROCKERLUG couplings. Safeguard against "like" couplings. Remember—Akron Brass originated ROCKERLUG. Only Akron Brass offers you the genuine.

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GAMEWELL FIRE ALARM SYSTEMS

Eliminate Delay - - - Reduce Fire Losses

THE CONTROL UNIT
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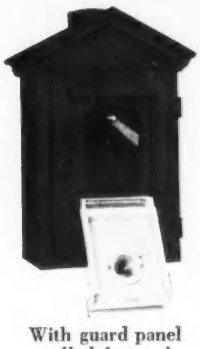
This Unit contains all battery, operating, recording and testing equipment necessary for the operation of a system ranging from One to Forty alarm boxes. We supply complete directions for installing.

THE GAMEWELL SYSTEM for Volunteer Fire Departments provides the essential elements of accessibility, dependability and speed in giving alarms.

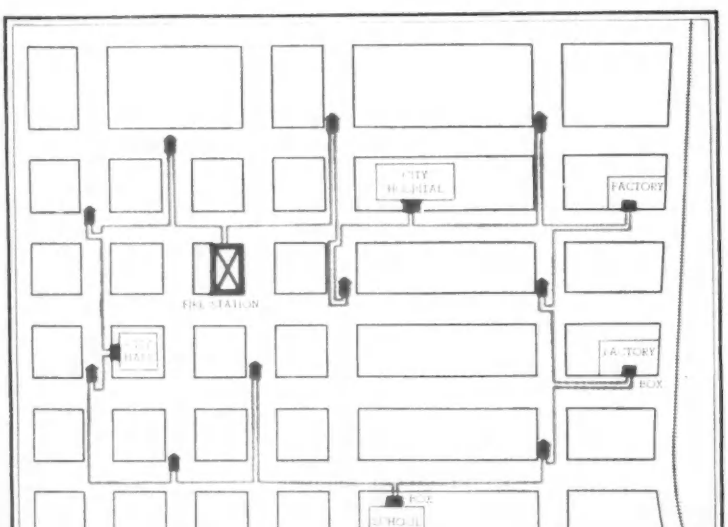
Public fire alarm boxes, quickly accessible, coupled with automatically responsive and coded public alarm equipment *eliminates delay by directing firemen to the scene of fire.*

WE INVITE YOUR INQUIRY.

GAMEWELL FIRE
ALARM BOX
VITAGUARD TYPE



With guard panel pulled forward exposing operating lever.



TYPICAL PLAN OF SYSTEM

DIAPHONE HORN

Operated by compressed air. Has great carrying power, distinctive tone and coding ability. A reserve supply of compressed air is automatically maintained.

NOTE: *Your own public alarm may be utilized and automatically operated by the Vitaguard System.*

THE GAMEWELL COMPANY

Newton Upper Falls, Massachusetts

Volunteer Firemen

Our Part:—

We are now at one of the great turning points in the recorded history of mankind. A great contest — a tremendous struggle is taking place to determine which path civilization shall take from the crucial crossroads where free men and tyrants have collided.

Other men with their lives are recording their will that Liberty and Freedom may be made available to all peoples; that we may enjoy without interference from foreign meddlers the heritage that is America.

We too have an important part to play in this climatic struggle — Wars, to be won, must be financed — The enemy seeks to finance his by robbing occupied countries, by enslaving labor for his war machine. We have a great opportunity to voluntarily put up the cash that can make the Hitler gang take the count in the field of economic warfare. Our dollars will call their colossal financial bluff.

The N.F.P.A. is investing substantially in U. S. War Bonds. Let each fire company and each individual volunteer fireman buy that extra war bond this month. Make the Fifth War Loan Drive a victory that will rank among the outstanding accomplishments of this great year of decision.

Buy Shares in the U.S.A.
— Buy Bonds Today —

●

"THE other day I had to buy a hammer. I wanted it in a hurry, so I went to a retail store and bought one. It was a small hammer but a good one, and the whole thing — hammer and handle — weighed 9¾ ounces, and for that I paid 90 cents. In other words, this combination of wood and steel cost me at the rate of $1.45 a pound.

"It got me thinking. We sell sprinkler systems installed and I venture to say that the average sprinkler system installed will not cost more than 20 cents a pound. It struck me that actually we're giving a lot of value for the money when you consider it this way.

"On some types of jobs we have to weld the outlets on the pipe before it leaves the shop, and we have to have it galvanized. It costs us 6 cents a pound just to do this galvanizing, and that compared to a sprinkler system which sells for about 20 cents a pound seems to emphasize still further that, after all, a sprinkler system doesn't cost an awful lot of money when you consider what you get for it, both in intrinsic value and in the protection it gives the properties in which it is installed.

"J. B. COLEMAN, *Chief Engineer*,
"Grinnell Company, Providence, R. I."

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-THE VOLUNTEER FIREMAN

In a recent fire investigation in Hamilton, Ontario, a check was made of some of the furnace pipes which were not involved in the fire, to determine their condition. The photograph shows the accumulation of rubbish that was found in one of the cold air intakes down below the protective grating. It is a rather striking photograph of the breeding place that such things may be for fires, if not kept properly protected and regularly cleaned — W. J. SCOTT, ONTARIO FIRE MARSHAL.

●

"THE Blackhawk Fire Fighters Association is composed of fifty fire departments and plant fire brigades throughout the four counties of Ogle, Lee, Whiteside and Carroll in northwestern Illinois. This organization holds regular meetings every six weeks, and carries on a serious program of fire-fighting technique, and fire prevention.

"About a year ago the officers developed the idea of carrying on a study course among its members, and Chief J. W. Just's Advanced Firemen's Training Course, as used in Maryland, was selected as the textbook. Each fire department or fire brigade purchased one of these books, and a committee was appointed to conduct this study course.

"A lesson is assigned each six weeks, and a quiz given at our regular meetings. The corrected quiz papers are returned at each meeting from the time before, and a discussion is held on these corrected papers. It is surprising the amount of interest that is shown toward this study course, and the amount of good being derived from it.

"Some of the departments, that hold their own monthly meetings, study the chapter assigned for the particular six weeks period in a group. Others have copies made and pass these out to their firemen to study at home, while a few pass the book among their firemen to study in a given period.

"Our members believe in the following motto once printed in VOLUNTEER FIREMEN: 'Large fires, like battles, are too few and far between to obtain the necessary knowledge from experience alone.'

"M. E. SCHRYVER, JR., *President*."

Postwar Use of Radio in the Fire Service

By Herbert A. Friede, Controller of Communications, Washington, District of Columbia

IN considering the subject, "Development of the Postwar Use of Radio in the Fire Service," I cannot help but first stress to you the lack of existing wire facilities that are an essential part of radio communications. Your business is primarily that of promoting public safety, and when you neglect any one phase of the many integral parts of this program, the chain becomes only as strong as its weakest link. Gentlemen, emergency communications systems have been sadly neglected. These are important. Their chief function is to incite to action the community's defenses against fire and crime.

The development of emergency signaling communications systems extends over a period of centuries. Signaling in one form or another, varying with the circumstances or the purpose in view, as a means of swiftly transmitting intelligence, has existed since the primitive era of mankind. The earliest recorded instances of long distance signaling may be found in the Bible, which were used to lead the people of Israel from Egypt to the Promised Land. Next, we know of the signal codes, smoke signals, etc.

In the Fire Service our early method of signaling the Fire Departments and calling them into service was somewhat similar to those of the ancients, the wagon tire and sledge hammer, the town bell, the watch towers.

Then, in 1851 the application of the electric telegraph as a fire alarm emergency communications system was developed. This has been steadily improved until today we have emergency communications systems to fit any fire department, depending upon its plan of operation. The National Board of Fire Underwriters has repeatedly stated that a properly designed fire alarm system is the only dependable means of announcing the outbreak of fire. Such a system must possess the prime requisites of accessibility to our citizens, speed of transmission, and reliability that are so essential in fire signaling.

The question may now be asked, why so much talk regarding the lack of fire alarm systems, when the topic to be discussed here was the "Postwar use of Radio in the Fire Service." The answer is, radio alone will not answer the problems of the fire departments, large or small, who have neglected or who fail to provide adequate wire facilities (Fire Alarm Systems) in their postwar planning programs.

I would like to give you an illustration of what is meant by this statement. I was recently requested to attend the dedication exercises of a volunteer fire department, made necessary by the rapid growth of a small community near my home. I arrived early the evening of this event, and was received by the President of the Fire Board, the newly appointed Chief, and other members of the Fire Board. The Ladies Auxiliary was preparing a fine banquet.

The President and Chief, knowing that I was in charge of all emergency communications systems in Washington, asked me to come to his office, to discuss a problem which had been troubling him.

He said, "I applied for a telephone yesterday, but cannot secure one because of the lack of facilities, and find that we must use the exchange number of the town 21 miles away, and it's a dial exchange. How can our people call our Fire Department into action?"

This town had built a fine station costing approximately $18,000 and purchased a piece of fire apparatus, fully equipped, for approximately eight or nine thousand dollars, and the O.C.D. had allocated two auxiliary pumping units for this department. They had expended approximately $30,000 for facilities the Board had provided, yet it never occurred to them that for a reasonable cost they could have provided a communications system that would have made it possible for the public to call this department into action quickly.

We find this to be typical of our American communities, who seem to take it for granted that communications facilities shall be provided by others or they should use regular commercial telephones as a substitute. In order to determine what is being done the International Municipal Signal Assn., in co-operation with the City Managers Association made a survey of approximately 870 cities having a population of 10,000 and up, and 600 or about two-thirds indicated that they are making plans for reconstruction and development.

These figures have been released by the Public Administration Clearing House a few days ago. Further, approximately 60 per cent of the cities from 10,000 population and upward have established regular or special planning agencies, which together, are spending millions of dollars in drawings and blueprints for post-war construction. Is your proposed emergency communications system included in these proposed postwar blueprints?

NOW that I have stressed the need and importance of wire facilities, so that the general public can call the Fire Service into action, I will outline to you what is being done to provide radio communications facilities for the Fire Service, now and during the postwar period.

At a meeting on September 15, 1943, the Chairman of the Federal Communications Commission, realizing the need for a well engineered plan for the use of radio frequencies, and realizing the volume of work involved, decided that the Federal Government could not adequately undertake such a study, but that the services using radio could do a better job due to their familiarity with their respective needs.

Therefore, the Radio Technical Planning Board was organized.

The Objectives:

"The objectives of the R.T.P.B. shall be to formulate sound engineering principles and to organize technical facts, which will assist in the development, in accordance with the public interest, of the radio industry and radio services of the Nation; and to advise the Government, Industry, and the People of its determinations. Such activities shall be restricted to engineering considerations."

The organization consists of the following sponsors:

1. Aeronautical Radio, Inc.
2. American Institute of Electrical Engineers
3. American Radio Relay League
4. Association of American Railroads
5. Edison Electric Institute
6. F. M. Broadcasters
7. Institute of Radio Engineers
8. International Municipal Signal Association
9. International Police Communication Officers
10. National Association of Broadcasters
11. National Electrical Manufacturers Association
12. National Independent Broadcasters
13. Radio Manufacturers Association
14. Society of Motion Pictures
15. Society of Television Engineers
16. The Telephone Group

Dr. W. R. G. Baker was elected Chairman of the Radio Technical Planning Board, and each sponsor has a member on

This paper by Mr. Friede was one of the talks given at the annual Volunteer Firemen's Forum at Philadelphia, May 10, 1944.

the Board, the speaker representing the International Municipal Signal Association.

The Board is divided into 13 Panels:

Panel 1 Spectrum Utilization
Panel 2 Frequency Allocation
Panel 3 High Frequency Generation
Panel 4 Standard Broadcasting
Panel 5 Very High Frequency Broadcasting
Panel 6 Television Broadcasting
Panel 7 Facsimile
Panel 8 Radio Communications
Panel 9 Relay Systems
Panel 10 Radio, Range, Direction and Recognition
Panel 11 Aeronautical Radio
Panel 12 Industrial, Scientific and Medical Equipment
Panel 13 Portable, Mobile and Emergency Services Communications

Panel 13 covers the services of Fire, Police and other emergency services.

This panel is headed by Prof. D. E. Noble, as chairman, and is divided into eight committees representing the various services as follows:

Committee No. 1 — Police Radio Communications, Robert Batts, Chairman
Committee No. 2 — Fire Service Radio Communications, Herbert A. Friede, Chairman
Committee No. 3 — Forest Conservation Radio Communications, Kenne F. Williams, Chairman
Committee No. 4 — Power Utilities Radio Communications, R. V. Dondanville, Chairman
Committee No. 5 — Transit Utilities Radio Communications, K. M. Hoover, Chairman
Committee No. 6 — Highway Radio Communications, Harry T. Ward, Chairman
Committee No. 7 — Railroads Radio Communications, J. L. Niesse, Chairman
Committee No. 8 — Engineering and New Portable Radio Communications, Frank A Gunther, Chairman

Committee No. 2 of Panel 13 is charged with presenting the needs of the Fire Service of the nation. On this committee all branches of the Fire Service are represented. The committee prepared the attached report as of February 15, 1944, which was forwarded to the Chairman of Panel 13, for the guidance of the members of Panel 1 — Committee 1:

FIRE RADIO COMMUNICATIONS SYSTEM
COMMITTEE 2 — PANEL 13

February 15, 1944 — Report to Committee No. 8

In accordance with the directive of the Steering Committee, dated January 20, 1944, Committee No. 2 submits herewith a tentative report based on the request of Committee 1 of Panel 1. This information is being forwarded to the Chairman of Panel 13 and the Chairman of Committee 8 as per their directive.

1. *Summary of the Service*

The nation is faced with an annual fire loss of approximately four hundred and fifty million dollars per annum, in addition more than ten thousand (10,000) lives are lost annually. This figure is steadily mounting.

Experience has taught us that fire has greater potential capabilities of extensive damage to industry, human life, and property than any other hazard that is subject to physical control.

The history of all our large fires in recent years show conclusively that lack of adequate communication facilities were a contributing factor to the sacrifice of life, the painful price of injury, and the irreplaceable loss of man hours of labor.

We have also found that no fire department today has a sufficient amount of apparatus or equipment to cope with all types of emergencies which may develop in a community, and under such conditions it is necessary to call upon adjacent communities for assistance. Therefore, in order to facilitate this co-ordination, an adequate and rapid communication system is imperative.

A plan designated as Mutual Aid has been developed that makes co-ordination and co-operation feasible, and which is in effect in many of our cities.

Mutual Aid

The Mutual Aid System of the fire service is predicated upon the obvious but often overlooked fact, that the agency first called, and first to respond with professionally trained men, apparatus and equipment to cope with any emergency is the fire department of our municipalities.

Upon the immediacy of the response of the fire department, the quick thinking, professional analysis, and appraisal of the situation by its trained officers, and upon their instant action, may depend the size of the disaster and the extent to which outside aid may be required.

For this reason the spearhead of effective Mutual Aid plans and procedures are the duty of the fire service, whose professional personnel are thoroughly trained, continuously tested and experienced by actual participation in functioning under the tense pressure coincident with emergencies. This emphasizes the importance of control and of adequate rapid communication facilities at this level.

Every citizen has a very considerable stake in the fire protection of our nation, and consequently in communication developments, that will help to reduce our ever increasing national fire waste. The records prove conclusively that the time required for the response and action of the fire department may determine the intensity and size of the fire. Communications are the nerve center of every fire department.

Present Wire Facilities

The modern fire departments of our municipalities are mostly all equipped with fire alarm systems consisting of fire alarm boxes, located on the street corners, from which the citizens can report fires to the Municipal Fire Alarm Headquarters. This department in turn dispatches the fire apparatus to the scene of the fire. In smaller communities the fire alarm boxes automatically transmit their alarms to the fire companies. These wire facilities are all operated and maintained by the municipalities. However, these facilities are woefully inadequate, and many cities and towns are without any such adequate wire facilities.

The above facilities are all supplemented by the commercial telephone service and in numerous cities by the manual and automatic fire alarm services furnished to private establishments by Central Station protective signaling companies.

When apparatus leaves its station, under present conditions, it is lost as far as the fire department headquarters is concerned. The apparatus is also at the mercy of its own resources.

1. The existing wire facilities for inter-communication between fire departments or dispatching headquarters are woefully inadequate for proper operation of the service.
   (a) Fire departments in the majority of our municipalities are separated by considerable distance, and are located many times in areas so that telephone communications between the units require too much time to be useful in the fire service because fire waits for no man.
   (b) To install municipal wire facilities or tie lines between Fire Alarm Headquarters to supplement conditions as outlined in (a) above, would be prohibitive in cost to the tax payers of a community.
   (c) In rural communities telephone wire facilities are so sparsely located, and in many instances lacking, so as to make their use for fire department impractical.
   (d) In case of large conflagrations, the telephone and wire facilities are generally rendered inoperative by the conflagration itself; therefore, placing a hardship on the fire-fighting forces when it is necessary to call into action additional services.
   (e) When forest or large brush fires occur, they are generally in locations well removed from all wire facilities.

(*Continued on Page 22*)

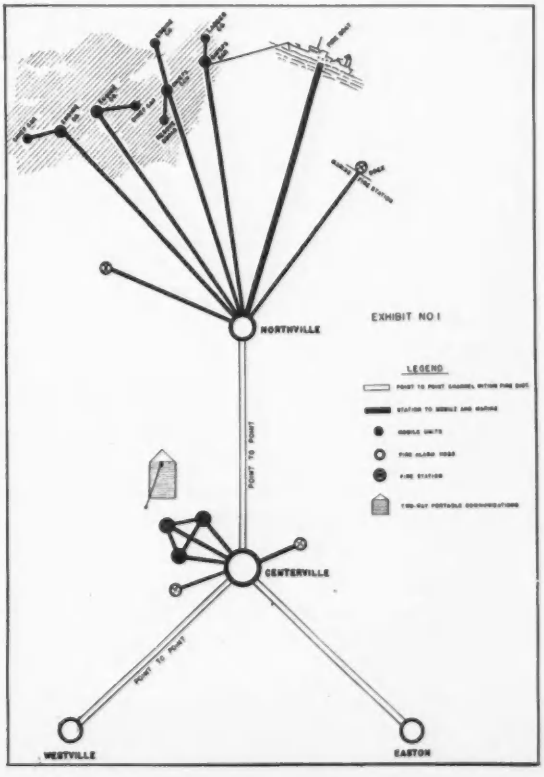


Exhibit No. 1. This will illustrate the channels of communications typical of several communities within a fire district. Northville indicates a typical fire alarm headquarters and the channels of communications necessary between the mobile, portable and marine units, also mobile unit to mobile unit.

This exhibit also indicates the channels of point to point communications necessary between adjacent communities. The distances between communities cover considerable distances, and are rural. These areas lack wire facilities suited for the fire service. The cost of installing wire facilities are prohibitive and beyond the ability of the taxpayers to maintain.

This exhibit also indicates the two-way portable service at a fire ground in large buildings. It is necessary to maintain a channel of communications with services in the street, such as Chief Officers, pumping units and others. At present when elevator service is discontinued the only possible channel is maintained by runners. Radio is the only solution. In rural areas aircraft is used for reconnaissance work and portable units would be used in this service.

TWO FATAL HOTEL FIRES

Modesto, California

Ruins of the older section of the Modesto Hotel following the fire which claimed two lives. The 75-foot aerial ladder, shown with a ladder pipe operating, was first used to rescue persons on upper floors. This ladder pipe nozzle is approximately 47 feet above the street level. In the back ground is the newer fire-resistive hotel annex which was saved.

THE old section of the Modesto Hotel was destroyed by fire reported at 10:49 P.M. on the night of May 3rd. Two men lost their lives, one from suffocation and one from jumping or falling as firemen were raising an aerial ladder to rescue him from the fifth floor. This victim's wife and child were saved by firemen on the ladder. One other guest was seriously injured when he struck the side of a life net into which he jumped. Several firemen received minor injuries.

According to a report by Fire Chief George E. Wallace, who also sent in the above picture, this old 5-story brick-joisted building was without sprinkler protection.

Fire started in the basement of a paint store in the older section of the hotel. When discovered by the manager it was of small size and he attempted to extinguish it before an alarm was telephoned by the night clerk.

When the partly paid and partly volunteer fire department arrived on the scene flames had spread up the open elevator shaft and inside stairways, and had burned through wooden floors and partitions filling the entire building with heavy smoke. The fire fighters' first task was to rescue the one hundred guests who were trapped. This was done by means of a 75-foot aerial ladder raised to the third, fourth and fifth floors, and by means of shorter ladders and life nets for occupants of the lower floors. A total of 425 feet of ladders was used.

After all possible lives had been saved fire-fighting operations commenced. Six engine companies used more than a mile of hose to place 12 streams in service. Good water supply was available from 6 to 10-inch mains. Fortunately, fire doors on all five floors aided in keeping fire from the new hotel building.

Despite a low wind velocity, a shower of sparks was carried for blocks, starting more than a dozen roof fires and several awning fires. In the Ross Lumber Company yard alone there were eight distinct blazes started. All of these exposure fires were fought by rural fire crews from Riverbank, Fmpire, and McHenry Dry Creek and by State-owned trucks. Auxiliary firemen helped control these exposure fires.

The old section of the hotel was erected in 1914 with the fifth floor being added in 1921. The newer section of fire resistive construction was built in 1927. Firemen were able to save the personal property of the guests in this newer section. The safes and vaults in the hotel preserved their contents from the fire but it is reported that the hotel register was lost.

The total loss from this fire is placed at $395,000.

Oroville, California

A FIRE discovered in the old Union Hotel in Oroville, California, at 3:03 A.M. on May 12th, took the lives of five guests, including one woman. Nine persons were injured.

The building was of two and three stories in height with brick walls and wooden interior construction including wooden stairways.

Fire Chief A. F. Kessler reports that the cause of the fire is unknown but that it spread very rapidly. The blaze appeared to have started in the rear of the hotel near the premises of the Hi-Way Club and quickly involved several fuel oil tanks near the rear of the hotel.

The fire was reported by a guest in a rear room and an alarm was telephoned to the fire department. Hotel employees attempted to warn the 62 guests by ringing the various rooms and by knocking at doors, but several guests reported they had been awakened by fire sirens and found themselves cut off by flames.

The third floor section of the hotel had an outside fire escape complying with the State law requiring one fire escape for the third floor of hotels and rooming houses where this floor does not exceed 6,000 square feet in area. Access to the fire escape was quickly cut off by flames. Several occupants of that floor escaped by jumping to the roof of the two-story section, by sliding down outside pipes, and even by climbing hand-over-hand along wires to an electric pole.

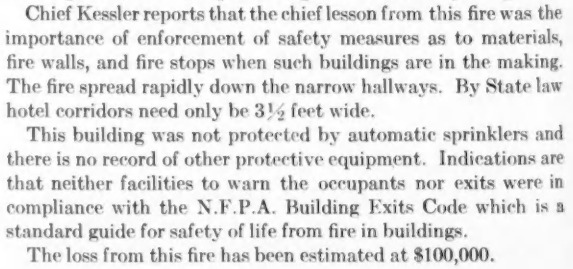
Firemen made very strenuous efforts to rescue the woman who was overcome in a second floor corridor but she died in a hospital several hours later. It is believed that she delayed too long to dress before making her escape.

Four engine, one hose, and one ladder companies from several communities used eleven hose streams to drown out the fire. Wired glass windows helped fire fighters save an adjoining hotel.

Chief Kessler reports that the chief lesson from this fire was the importance of enforcement of safety measures as to materials, fire walls, and fire stops when such buildings are in the making. The fire spread rapidly down the narrow hallways. By State law hotel corridors need only be 3½ feet wide.

This building was not protected by automatic sprinklers and there is no record of other protective equipment. Indications are that neither facilities to warn the occupants nor exits were in compliance with the N.F.P.A. Building Exits Code which is a standard guide for safety of life from fire in buildings.

The loss from this fire has been estimated at $100,000.



The old Union Hotel in Oroville, California, which took five lives. The section at the right was three stories high and that at the left was only two stories high. This fire shows the falacy of the idea that buildings of low height are relatively safe in event of fire, despite lack of adequate exit facilities and combustible interior construction open to the rapid sweep of flames. Lives were lost on both the second and third floors.

Eagle Hotel Fire . . . Brunswick, Maine

By Chief Harold E. Nickerson

BRUNSWICK, MAINE, like so many other towns located near a ship building plant or war industry, awakes each morning to find most of its man power and part of its woman power moving out of town to their essential work for the next eight hours, leaving the various town departments and local industries to operate as best they can in their absence.

The local Fire Department, one set up many years ago when the population of the town was about eight thousand, with very few changes, now must answer the calls with the town doubled in population.

Monday, May 1, 1944, was just another day for the few left in town to answer the Fire Department calls, which job they very willingly undertook.

At 9:50 A.M. a call came in for a grass fire and this was of no great account.

At 11:20 A.M. the lookout tower man on Mt. Arrarat reported a smoke near Thompson Street. This proved out to be a grass fire covering about four acres.

It was while we were finishing this off we heard box 312 sound and at once knew it was the box located in the lobby at Hotel Eagle.

Leaving one fireman and a volunteer to watch the grass fire the others of the crew started for the hotel.

At the fire station the call had come over the phone saying "the Hotel Eagle is on fire" and the box 312 was blown from the master box in the station.

With our best engine out of commission because of a broken piston, the only other engine and Ladder 1 were soon rolling to the fire.

Not many minutes after the trucks arrived at the fire, we, from the Thompson Street fire, were at the scene.

The first few men to get there had laid a line to the third floor and were fighting as best they could, in the intense smoke, from the front.

The line could not be moved around fast as there was a distinct lack of help. Then came a line from the rear or west end, another on the south side in through a second floor window, another on the north side, another to the fire escape on the rear or west end, and as yet the arriving help was needed on lines and not enough spare help to put a ladder to the roof.

Help enough with school boys and clerks, etc., who had never helped put up a big ladder, gave us a lift and finally we got a fifty-five-foot ladder to the roof.

Then came a pause while the one engine was refilling with hose.

By the time the engine came back with more hose a call had been sent to the Brunswick Naval Air Station for help, a call to the Bath Fire Department, to the Bath Iron Works and the Harding Fabrication Plant for help and at the same time for each of these places to send all the Brunswick firemen, employed in these industries, home.

All this time that had elapsed the few men had worked hard and faithful to their job had succeeded in keeping the fire from spreading, but the lack of help to put a ladder to the roof soon enough allowed the fire to spread through a blind attic.

By the time an engine arrived from the Air Station we had placed our deluge pipe on the south side of the building and, with two lines from the engine pumping from a hydrant, had pressure enough to keep the roof wet down.

Chief Frates, from Bath, arrived at this time and hooked the Bath engine to a hydrant and soon had another deluge pipe going on the north side of the building.

The men from the Harding Fabrication Plant and the men of the Brunswick Department, who were working out of town, came along at the same time the Bath Department did.

After this lapse of time, which had gone by all too quickly, the experienced help was available to really fight the fire and with these men on all sides of the job, with hose lines working in and two very effective streams working from the top, it was a short job to finish it off.

We had laid about twelve thousand feet of hose in the sixteen lines used; used about five hundred feet of ladders and poured about two hundred thousand gallons of water into the building.

When the fire was over the roof was partly burned off, enough so it will have to be rebuilt. Top floor: some of the rooms entirely burned and others burned enough so must be new plaster, etc. Third floor: five rooms ruined, others can be fixed as good as ever. Second floor: three rooms badly damaged, others smoke and water damage. First floor lobby and cocktail room, smoke and slight water damage. Dining room, smoke and water damage. Kitchen and serving room, some fire and much smoke and water damage.

It has put a much needed hotel in a defense and military area out of use for some time; just how long it would be hard to estimate as it depends on getting labor and material.

We feel thankful the fire came in the day time, as this hotel has been full to the top every night and had it come in the night probably there would have been lives involved. The damage is around fifty thousand dollars.

We feel very grateful to the neighboring fire departments and wish to compliment them for their quick response to our call for help.

Hampstead, N. H. firemen reportedly had this early morning blaze in the Central Grammar School across the street from their fire station under control when the water hole from which they were pumping went dry.

Current Aspects of Firemen's Training*

AMERICA is a Nation of volunteer fire departments, due primarily to its widespread rural population, the vastness of the country and the number of counties, small cities, towns and villages, both incorporated and unincorporated, all requiring some sort of fire protection.

Those closely connected with fire prevention and fire fighting since America has been at war have recognized the increased need for practical fireman training, but the fact remains that this same need for training, without the compelling influence of preparedness and defense in time of war, has existed ever since the days of the first volunteer fire departments in this great country. And it has now become rather well recognized that fireman training should be a **continuing** rather than an intermittent process. The need for having continuing, organized, systematic training programs is clear. New personnel is constantly being added to all fire departments, and firemen do not stay trained. Along with these factors are new and better methods of fire prevention and fire control which are constantly being developed and with which the efficient fireman must be familiar.

Any worth-while undertaking is made up of certain parts which, if clearly distinguished and properly co-ordinated, account for satisfactory results in connection with the development of an action program. It seems to me that there are three main parts to a fireman training program:

1. Basic operational training for the rank and file of men on a department.
2. Officer training for those who are responsible in administrative, managerial, and supervisory capacities.
3. Instructor training designed to prepare or improve instructors who actually conduct fireman training work.

In the past much of the emphasis in fireman training has been given, and rightly so, to basic operational training for rank and file firemen, but recent experience is showing us that there is more than one "front" to firemen training, just as there is more than one front to aggressive warfare, and that each of the three parts just enumerated constitute a "front" which must be pushed at the proper time if ultimate success is to be attained.

Now the kind of teaching needed for the training of instructors is not the same as that for teaching evolutions, and when it comes to fire officer training both the approach and method used differ from either instructor training or basic training, but all three types of training must be carried on because they go hand-in-hand in a co-ordinated effort, and one is dependent on the other. Rank and file firemen should know how to perform their duties quickly and efficiently; officers should know how to direct and handle their men; and instructors should know how to teach either the officers or men on a department.

W. A. Ross, Consultant
Public Service Occupations
U. S. Office of Education

There are six essentials in connection with the organization and operation of a systematic, continuous fireman training program with which we are all more or less familiar. Let us identify them stated in simple direct terms. Here they are:

1. There must be a specific *need*.
2. There must be a *goal*.
3. There must be *learners*.
4. There must be an *instructor*.
5. There must be *instruction*.
6. There must be *supervision* and *follow-up*.

These essentials apply to any training which is truly vocational and which really functions in the daily life of working people. These are things which must be determined or provided and developed as they relate one to the other.

Need. It may seem unnecessary to discuss the matter of need for training since thinking people, doing a constructive job and anxious to serve, agree that some need for training exists in practically every fire department in the country, but needs must be determined in rather specific terms, and they must be **recognized** as real needs by those responsible for the success of the department. It takes work and study and patience to put your finger on these specific needs and to set them out so that a clear view of them can be had from various angles. Having done this, the real facts can then be uncovered and the trail blazed for an effective training program. Next, it becomes a matter of deciding on which phases of training should be undertaken first, and with which groups, and deciding on an order in which the instruction program will be developed.

It sometimes happens that because the needs were never determined in anything more than general terms, that training offered has been unsatisfactory. In some instances there has been a loss of faith in the value of training due to the fact that what the firemen really needed was not clear in the minds of those in charge at the outset. The difficulty here lies not with the training but with the individuals responsible.

Goal. It may be unnecessary or undesirable to organize a training program that will include **all** of the training needs at one time. When learners expect to become skilled, however, it is obvious that during the total period of instruction they should be taught the steps in the necessary jobs. If, however, they need to learn only a few evolutions and acquire a certain amount of technical information, immediate training may include only a few short units of instruction, or perhaps portions of several units.

The goal set for the instruction largely determines the procedure to follow and should be an outgrowth of the pre-determined needs for training. The goal when decided upon should indicate the direction the training will take, how far down the trail the learners will be taken, or will go, in a given time and what results in the learners are to be expected at the end of the trail.

Goals are signal lights that help to keep our progress true and "on the beam." From time to time it is possible to say, "Here we are now with reference to where we were and to where we want to go." Goals are targets to be hit. Without them there is a chance that we may drift rather than move forward steadily in the right direction. No target was ever hit, however true and steady the aim, unless the trigger was pulled on the weapon used. Our aims are only hopes until we get action.

Learners. The learners in every instance are firemen — either officers or men from the ranks. Some have spent years in the fire service with varied experiences. Most of those experiences were valuable and helpful. Progress depends pretty much on the vision these firemen have of their opportunity for service, the encouragement they have been given, and the value of previous training. Then, many men have had very limited experience and most of their learning is still ahead of them.

Regardless of background, it is men who have the desire to know, who want to improve and know more, and whose attitude is fair, that form the nucleus of any firemen's training class. There is a public relations, economic angle to fireman training. Tax money, to a greater or less degree, makes it possible to render fire service to a community. The people have a right to expect something for their money, however small the amount spent. The well-trained fireman is in a better position to give his best to the people he serves and if approached in the right manner usually realizes that training offers him an opportunity to also improve personally.

Most of us go where we get our money's worth and we return for more of the same product when we feel we are getting our money's worth. It is so with teaching and learning. Learners intuitively realize when they are getting something of value.

(*Continued on Page 18*)

* From an address delivered at the Volunteer Firemen's Forum, National Fire Protection Association meeting, Philadelphia, Pennsylvania, May 8–11, 1944.

Smoke for Protection and Protection from Smoke

Official U. S. Navy Photograph

HERE the USS Philadelphia is shown weaving a veil of smoke to protect ships anchored in a beachhead bay.

The USS Philadelphia and all Navy combat ships are adequately equipped to eliminate smoke by extinguishing fire should it start on shipboard. With the appearance of the first curl of smoke or tongue of flame, the fire fighting equipment is available for instant use. This efficient U. S. Navy fire protection is saving many lives and valuable ships in the daily naval encounters of this World War.

The U. S. Navy has adopted National Foams and is using them extensively, especially to combat oil and other particularly hazardous fires on land and sea. National Foams are used by most oil refineries and by other important industries.

Our engineers will gladly consult with you and advise regarding type of equipment which will most effectively meet your needs.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for the use of Fire Departments to meet all types of fire fighting requirements. Complete engineering service available.

The experience of our engineering department is at your service.

BACK THE ATTACK — BUY WAR BONDS

NATIONAL FOAM SYSTEM, INC.

Specializing in Foam Fire Protection

Packard Building, Philadelphia 2, Pa.

New York State Discontinues Fire Training Program

THE New York State Fire Training Program, which for the past several years has operated as a part of the War Training Program in that State, has been terminated. The program had been under Albert H. Hall, Chief, Public Service Training Bureau, State Department of Education. Capt. Edward F. Curren was Chief Instructor assisted by Chief Henry F. Drake, of Clinton Corners, Chief Howard J. Keller, of Canisteo, Chief Charles F. Vogel, of Chatham, Chief W. Lewis Armstrong, of Old Forge, and Chief Floyd L. Brown, of Monticello.

The New York State Fire Chiefs' Advisory Council had co-operated with the Education Department in working out a training program that attracted favorable attention from firemen's training leaders throughout the United States. More than 25,000 firemen received basic instruction in more than 100 fire schools. Specialized training was given in rescue squad training, arson detection and prevention, industrial plant protection and inspection. Fire prevention demonstrations were given to more than 50,000 persons. (See VOLUNTEER FIREMEN for September 1943.)

The program was terminated when, without consultation with leaders of the fire service or representatives of the State Education Department, the Office of War Training was abolished by the State War Council and a drastically curtailed program was transferred to the office of the State Director of Civilian Protection. It was planned to retain only two instructors and to curtail considerably the curriculum taught. Believing such a change abortive to the purpose of the program, all of the instructors refused to participate and the training program was suspended.

A joint statement entitled "The Facts In Regard to the New York State Fire Training Program" has been issued by Leon H. Ingersoll, President, and Seth T. Cole, Chairman of the Law Committee of the Firemen's Association of the State of New York.

The New York State Fire Chiefs' Association at its annual meeting in Utica, in May, passed a unanimous resolution asking Governor Dewey to re-establish the Fire Training Program as a permanent function of the Public Service Training Bureau of the State Department of Education.

Former Chief Instructor Curren With Underwriters Rating Board

SINCE the termination of the War Training Program Edward F. Curren has been appointed Chief, Engineering Department, Underwriters Rating Board, 1 Columbia Place, Albany 7, New York.

Chief Curren reports that his services are still available to the fire departments of New York State on request. The Underwriters Rating Board is a service organization supported by New York State Standard Advance Premium Co-operative Fire Insurance Companies. They have offered this service to the fire departments and communities of the State with the view to establishing and promoting fire prevention, fire protection, inspection, and fire education programs.

Chief Curren has prepared, for use by fire departments of the State, a set of simple report forms covering hose, apparatus, fire reports, inspection blanks, blanks for reporting accidents to men and to apparatus in accordance with State law. Several of the forms are illustrated on this page. The forms covering accidents to men and apparatus (not shown) were prepared by Mr. Seth T. Cole, attorney for the New York State Firemen's Association. Mr. Cole has pointed out that several times in the past the courts have awarded a judgment to firemen injured in the course of their duties, but the reporting of the incident was not according to law and the judgment was not paid.

It is reported by Chief Curren that his office has been extensively engaged in encouraging fire prevention through the medium of material supplied to local communities, and by furnishing speakers for fire prevention meetings. Special classes in firemen's training are also being planned.

STANDARD FIRE DEPARTMENT INSPECTIONS

UNDERWRITERS RATING BOARD FORM NO. 200

LOCATION — No. of Stories

OCCUPANCY
Dwelling (single)
Dwelling (multiple)
Tenement
Business
Manufacturing

CONSTRUCTION
Brick
Frame
Fire-resistant

ROOF
Composition
Shingle
Slag
Slate
Combination

ATTIC
Chimney lined
Chimney unlined
Combustible materials
Duct work

VERTICAL OPENINGS
Stairways
Branch water
Chutes
Ducts
Registers

ELECTRIC WIRING
Open
Conduit
Fuses (size)
15
20
30

HEATING PLANT
Steam
Hot water
Forced air

FUEL
Soft Coal
Hard Coal
Oil
Gas

FUEL STORAGE
Inside
Outside
Capacity

SAFETY DEVICES
Stack control
Protecto relay
Aquastat
Low water cutoff

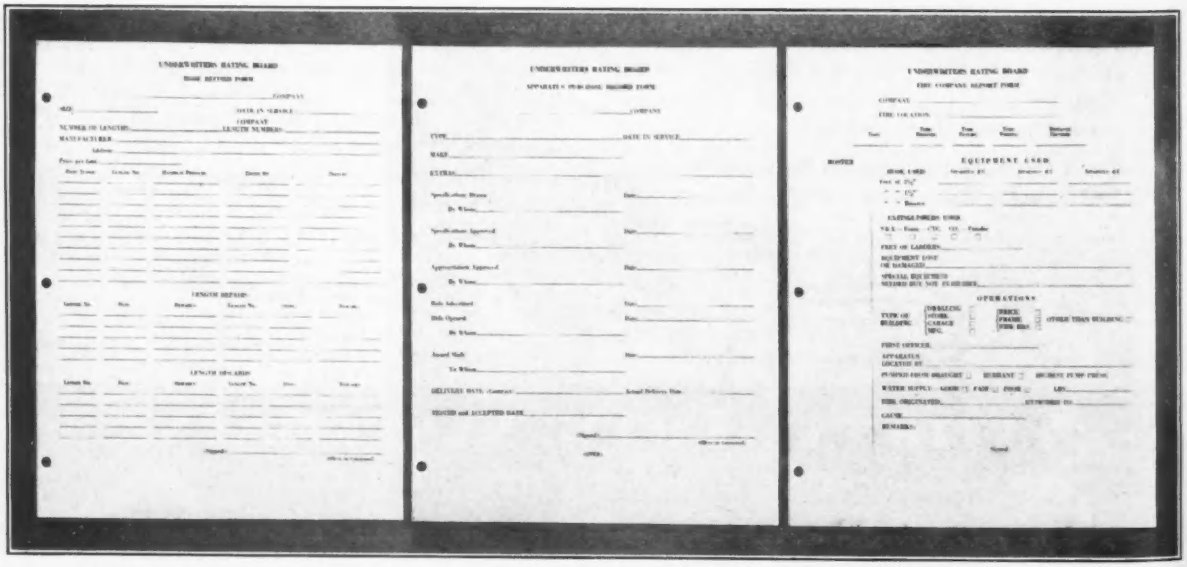
HOUSEKEEPING
Good
Fair
Bad

RUBBISH DISPOSAL
Good
Fair
Bad

FLAMMABLE LIQUIDS

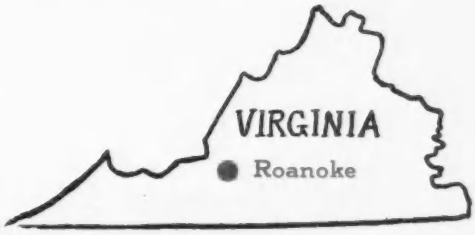
Inspector — Date of Inspection

OVER



Typical simple record forms made available to the fire departments of New York State by the Underwriters Rating Board, Albany

OREN



"The South's Only Fire Truck Manufacturer"

Triple Combination Unit Built for Lewis County and Weston, West Virginia, consisting of Hale 500 G.P.M. Two Stage Centrifugal Pump which is Fully Enclosed, Semi-enclosed Body, Five Man Cab and other Necessary Equipment.

★ **OREN** builds a complete line of FIRE TRUCKS. Write for information. ★

OREN FIRE APPARATUS COMPANY

1201-9 WEST SALEM AVENUE

ROANOKE, VIRGINIA

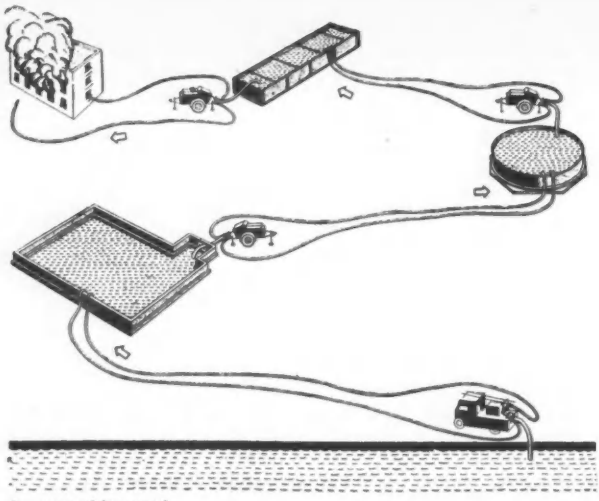


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Diagram showing open relay built up as a result of bringing up water to the fireground in successive stages.

British Wartime Organization For Relay Pumping

This is the official story, used by permission of His British Majesty's Stationery Office through the courtesy of the British Information Services. The diagrams and the text are from the Manual of Firemanship (Part 3) by and for Britain's National Fire Service.

THE more familiar method of conveying water from a distance for fire-fighting is by pumping through long lines of hose. This method takes time to get into operation and a considerable quantity of equipment is needed, but when the volume of water required is large, and the supply must be maintained for some time, it is the only practicable course where no prelaid pipeline is available.

There are two methods of relaying water by means of hose and pumps:

(*a*) By pumping from a static water supply into a dam [tank] at a suitable distance from which the water is lifted by a second pump and passed to another dam, and so on until the fire is reached. This method was sometimes known as relay or "open relay" pumping to distinguish it from

(*b*) Series or "closed relay" pumping, in which water is pumped direct from the supply to the fire, sufficient pressure to overcome frictional and other losses in the hose being maintained by pumps interposed at intervals in the hose line.

Conveying water by this "open" method is not normally used when initially establishing a long relay, but such relays are often built up in practice as a result of fire-fighting operations.

The second method is now generally regarded as the most efficient relay system, and the distinction in terms has consequently been dropped, any method of conveying water from one point to another being now spoken of as "water relaying."

(*c*) There is a third method of supplementing water supplies which is of value on occasions. This is collector pumping, and may briefly be described as the assembling of a number of weak water supplies into a single pump to produce one really effective supply. In peacetime this method of pumping is usually limited to the collection of several weak hydrant supplies in order to obtain a few strong jets [nozzle streams].

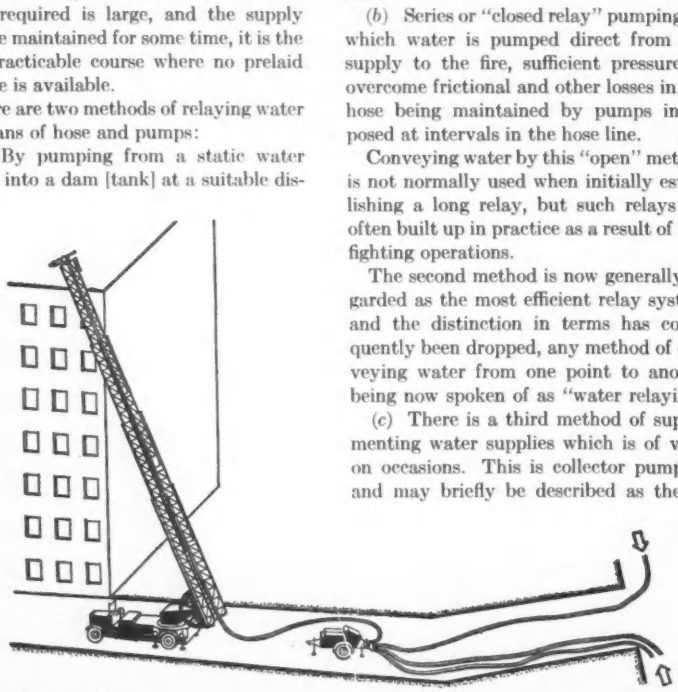

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Diagram showing use of "collector pumping" to supply a turntable [aerial] ladder.

In war-time, although hydrants should not be neglected when mains are intact, it may often become necessary to use the numerous static supplies created for war-time purposes. Where these static supplies are available close to the fire, collector pumping is not required. Occasions do arise, however, where collector pumping may be used with advantage. The layout of static water supplies, however well planned, in practice does not cover all contingencies. For example, a turntable [aerial] ladder or an extra large branch [nozzle] such as a radial branch or deluge set may be required at a certain site some distance from any good supply of water and with room for only one pump to approach within working distance. Under such circumstances collector pumping would prove valuable, and the ladder monitor or other really effective jet [stream] could be maintained.

Collector pumping may also be usefully employed at the commencement of a relay. Where light pumps only [small ones, usually 250 GPM (U. S.)] can be worked alongside the static supply owing to conditions of approach, several such pumps can supply a large pump at the commencement of the relay. In the same manner a collector pump may be used at an intermediate stage in a weak relay to pick up additional water to supplement the flow.

The effective use of a radial branch or deluge set, both of which require large quantities of water, may not be possible unless collector pumping is resorted to. Where one pump can deliver the quantity and pressure required to feed such branches, better control is obtainable, though when using the larger sized nozzles [tips] this may not be possible. A further instance of the practical value of a collector pump is in feeding a large dry-riser [water tower or dry standpipe].

To provide a standard technique of water relaying, and thus make it easier for strange crews to work together, a standard relay system has been established for the National Fire Service.

There are many advantages in having a standard system, the principal of which are:

(*i*) In the maiority of cases in which relaying has been necessary most of the personnel from stations in the affected area have been engaged at fires, and reinforcing crews have had to carry out the work. Consequently, some system is required which will provide for efficient relaying, not only by local crews, but also by men unfamiliar with local topography and conditions. This is only possible if a standard system is employed.

(*ii*) When the officer in charge of a fire requires an additional water supply he

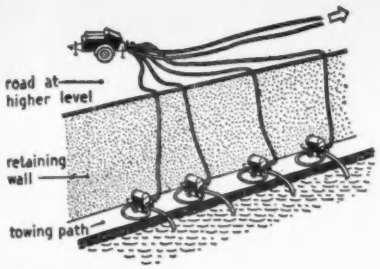

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Diagram showing use of "collector pumping" at the commencement of a relay using light pumps [250 GPM] on a towpath inaccessible to large pumps [500 GPM].

should not be expected to work out details of a relay. The use of a standard scheme obviates the necessity for planning on the fire ground and makes it possible for junior personnel to run relays satisfactorily.

(*iii*) Speed in providing at least a single line is the primary consideration in establishing a relay, and the creation of a standard system inevitably results in a greatly increased speed.

Equipment

To simplify the organisation of relays a standard water unit which can be ordered on to fires for relay purposes as a complete unit is often employed.

The composition of a water unit at present is as follows:

One self-propelled heavy pump [600 GPM (U. S.) or larger], 1 hose-laying lorry (carrying 6,000 ft. of 3½ in. rubber-lined hose), 1 lorry for ramps, etc., and 1 motorcycle (to be drawn from the general apparatus pool).

The pumps used in a relay should all be of the same type, with the exception possibly of the supply pump. There is no advantage to be gained by inserting heavy pumps [600 GPM (U. S.) or larger] in a relay composed mainly of large [trailer] pumps [500 GPM (U. S.)], since the limited capacity of the large [trailer] pump will restrict the flow, and thus prevent advantage being taken of the larger capacity of the heavy pump. The capacity of a relay is governed by the capacity of the smallest or least efficient pump. For the standard relay the most economical pump to use is the larger trailer pump [500 GPM (U. S.)].

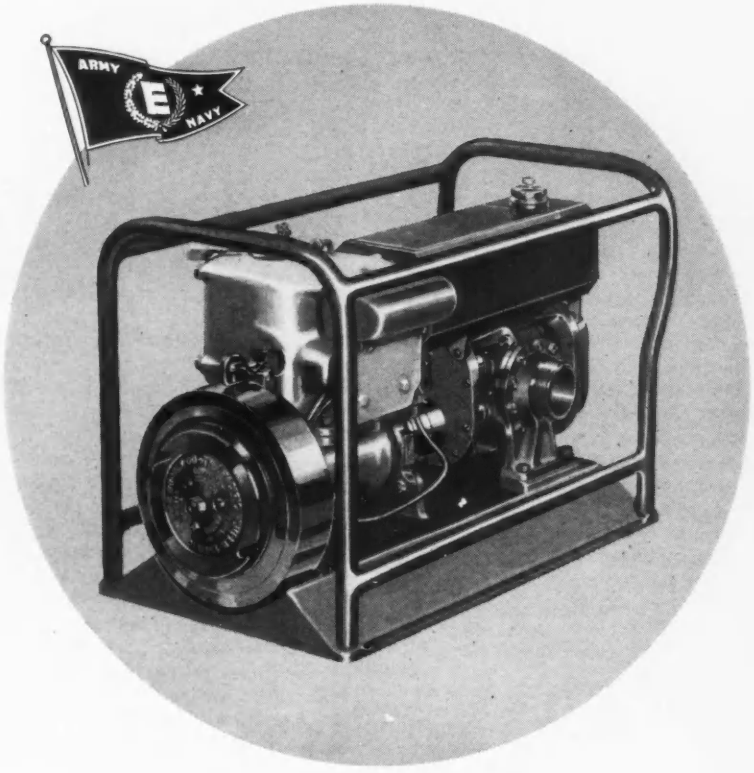
Whenever possible 3½ in. rubber-lined hose should be used, as a considerable saving in man-power and appliances is thus effected. Unlined 3½ in. hose is the next best alternative, whilst unlined 2¾ in. hose should only be used as a last resource if no 2½ in. rubber-lined hose is available, as it is wasteful in man-power and equipment owing to the restricted distance between pumps, necessitated by frictional resistance.

Parts 1, 2 and 3 of the Manual of Firemanship of the British National Fire Service are now available. They may be obtained for 75 cents, for each part, from British Information Services, 30 Rockefeller Plaza, New York, N. Y. They are a useful addition to the library of any fireman or fire company.

Pacific

HANDY BILLY

Portable Pumper



The principles of design and precision manufacture that have made the Pacific Handy Billy such an effective fire fighter for the Navy will, in due course, be available to protect forestry, industry and shipping against the ravages of fire.

Fire Fighting Equipment Division

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON

"Through Hell and High Water"

During the months of April and May several Midwestern states suffered floods which brought fire fighters into contact with some very trying situations. Here Chief J. A. Watson, of Wichita, Kansas, tells how his department struggled through forty-four inches of water to fight a big fire on April 22nd. Note front of stranded pumper at right of picture. The following is taken from a report by Chief Watson.

I WILL try and give you some more information regarding the lumber yard fire which occurred in our city as of April 22, 1944.

The alarm was received via telephone by the dispatcher at 4:41 P.M. for lumber yard at Pattie and Douglas Avenue. This being the twenty-first alarm due to the storm and flooded area involving several square miles and over some four thousand dwellings and a large portion of the heavy industrial and business section of this city, especially the eastern part in the vicinity of the drainage canal.

It was about four blocks west of the fire that we first were forced to reduce our speed, due to the water which was getting deeper as we proceeded, and to the stalled traffic which occupied the center and highest part of the street, forcing the apparatus into deeper waters at the curbs.

Station Number Two responded with one truck and two engine companies and a District Chief and Station Number One answered with a hose company, on the first alarm. Another engine company responded later.

Within two blocks of the fire, which had made good headway, every machine had stalled. The water at this point was thirty to forty inches in depth with a current that would sweep a man off his feet. The side walls of the buildings tended to curb the water as a nozzle.

Companies used the shoulder carry in laying their lines with the appreciated help of the auxiliaries and citizens who responded with their services in every way that they could.

All lines were 2½-inch and laid from hydrants as only one machine reached within forty feet of a plug and stalled, thus depriving us the use of a pump.

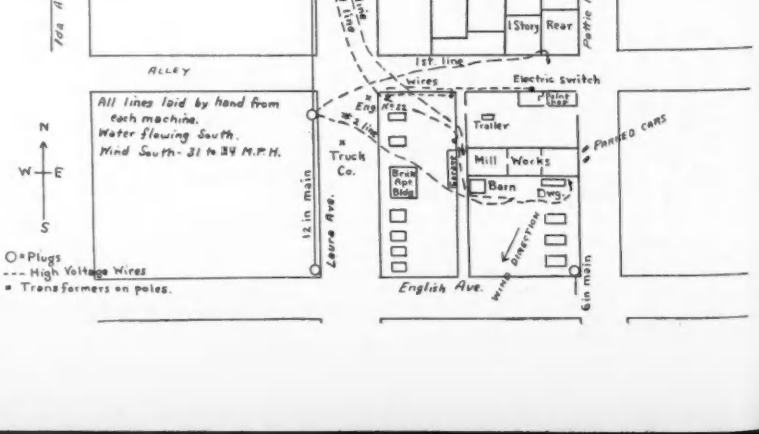
First lines were laid down the alley to cover exposures being the rear of a solid block of business buildings which were being subjected to intense heat as the alley was about sixteen to eighteen feet wide and the fire originated at this point.

Lines off a 12-inch main and others from 8-inch mains afforded fair streams as only one line was longer than 500 feet. High voltage overhead wires and their poles were burning and constituted a potential hazard.

Lumber yard was of frame construction, fenced and with a partial roof and being empty other than some stored lumber in the south side, which was being used by a millworks company. The north 25 feet of the lumber yard frontage was the office. This was occupied as a paint company. This part extended to a depth of some 75 feet along the alley. This building was partitioned into stock rooms where usual paints, oils, lacquers and thinners and some wall paper were stored.

In the rear of the lumber yard stood a trailer house where a recent employee lived with his wife and daughter. They had left their low sitting trailer and had gone into the paint store to escape the high water. Seeing an elderly lady being aided by a young man, the woman and girl had beckoned them into the store as it was directly across the street from the elderly woman's home. After they entered, some one warned them that the electric switch should be pulled. The lady of the trailer house got matches then she and the young man walked toward the rear rooms seeking the switch box which hung on the north wall along the alley.

She stated that she gave him the matches and after having struck the match, the space about two feet above the water level seemed to flash and her clothing took fire. In her effort to escape she fell in enough water to extinguish the clothing. She said the fire flashed ahead of her toward the front, out the door which led into the lumber yard proper. The young man being unknown by any of this group managed to leave to parts unknown, as he has never been located.



On the morning delivery, the postman was heard to say that he thought that gas was leaking when he entered the paint room, but later denied this. The elderly lady thought that she smelled gas. The occupants of trailer house didn't notice any odors.

The water was about one foot in depth over the floor of paint company office when postman made his delivery. Bubbles were noticed arising near the floor furnace and were called to the owner's attention. He in turn shut off two valves to the floor furnace.

The entire paint section, lumber yard, trailer house and the millwork plant were involved when I arrived as I was forced to wade some five blocks before viewing the extent of the fire.

The fire being aided by numerous explosions of either oils or other volatile liquids. With the high wind carrying burning embers to adjacent dwellings, only the composition roofs retarded the spread of the fire. Firemen were kept busy extinguishing the large burning timbers that were floating among fences, sheds and dwellings.

The south 50 feet of this 125-foot frontage was occupied by the Millworks Co. A one-story cement block structure extended the entire length of the lot, being about 150 feet in depth, housing heavy plane machinery and some lumber. There were two or three partitioned rooms in the whole building.

The fire was throughout this structure and the heat and flames were in the roof of a one-story frame dwelling, which stood just three feet south of the property line of the mill company.

The one break we got was the vacant lot just south of the frame dwelling, and the heat being carried across the back yards and everything was well soaked with the recent rains. Another factor that served to retard the heat was the solid masonary wall along the south line of this property.

All the apparatus answering this alarm, except the ladder truck were towed back to their quarters as they were temporarily out of service due to the water in crank cases and wet ignition systems.

Several people remarked that we had plenty of water in the streets and why didn't we just drop the suctions and pump, but they forgot that the motors were drowned out.

Where swift water such as this is encountered, using the shoulder carry or any other method, the hose will pull off your shoulder or out of one's arms when the lines are lowered in the water. This requires much more hose and empty hose is bad if not worse as it is lighter and the pull is faster. Anchor all lines. If not aided by auxiliaries and citizens we would have had to utilize department to lay lines singly. Stalled traffic proved a decided handicap.

One man lost his life due to heart trouble and exertion at the fire. The fire loss was $34,150.

HANG THESE ON YOUR WALL! this famous fire

this famous fire fighter

S.O.S. FIREGUARD 1 qt. size

If it's GENERAL DETROIT it's better

Hundreds of the world's most precious art treasures were destroyed within 30 minutes when flames engulfed the New York Crystal Palace on October 5, 1858. As an event of world-wide interest this historic fire was illustrated by Currier & Ives, renowned print makers. A free copy, reproduced in black and white, is available now from The General Detroit Corporation. Ideal size for framing. Limited supply. Send coupon *today!*

S.O.S. FIRE GUARD is a quick, efficient, "on-the-spot" fire fighter. Handy 1 or 1½ qt. sizes for car, truck, boat, airplane, home or plant. Instantly extinguishes flame . . . guards against post-ignition hazards . . . S.O.S. FIRE GUARD is a vaporizing liquid (C.T.C.) type extinguisher, recommended for electrical, gasoline, oil, and similar fires. Quality mass produced for essential users by General Detroit, makers of Alaskan, Floafome, and CO/Foy. Prompt delivery.

THE GENERAL DETROIT CORP.

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NEW YORK DETROIT CHICAGO

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HANG THIS ON YOUR WALL

THE GENERAL DETROIT CORP.
2200 East Jefferson Ave., Detroit 7, Michigan

Send free copy of the "Crystal Palace" fire.

Name _____

Title _____

Attach this convenient coupon to your letterhead and mail. (500)

Current Aspects of Firemen's Training

(*Continued from Page 10*)

They are, therefore, willing to spend time and effort on such enterprises. When such is not the case, we may well look to our wares and our salesmanship.

Instructor. To those who have the inclination to instruct and train there are some simple patterns and guides to follow. These patterns and guides when combined with a reasonable amount of native ability, usually bring satisfactory results from the standpoint of practical firemen training, but we cannot depend on "pick-up" learning as far as methods of teaching are concerned. To train a man how to instruct others well requires just as much careful thought and systematic development as does the basic training to develop a satisfactory rank and file fireman. We, therefore, need to give careful attention to preparing instructors and to providing, as far as possible, for a continuous supply of them.

Just as there is a fund of information on the proper performance of evolutions, there is also a fund of information on sound instruction principles including outlining a course, how people learn, selecting and organizing instructional material, analyzing activities, preparing lesson plans, conducting a class, and following up the learners after the class work has been completed. These are duties and responsibilities not peculiar to everyday fire fighting but to the profession of teaching. Fire instructor requirements then call for a combination of training and experience in both the teaching and firemanship fields, and while it is recognized that some men are natural teachers just as some men are natural firemen, the surest way to a high level of efficiency is a training program which takes these points into consideration.

Instruction. Vocational experience has shown us the desirability of having members of a particular group under instruction with common interests, duties. While a fire chief, his officers and the firemen have certain common interests, their specific duties, responsibilities and problems vary considerably. This illustrates the need for dividing administrative and operative personnel into different groups for training — in other words, officers in one group and rank and file firemen in another. Usually the conference procedure is appropriate with the administrators or supervisors while the instruction process is appropriate with the learners in operative groups.

IT depends largely on the level to which the instructor plans to bring his learners as to how extensive advance planning, lesson organization and actual instruction must be done. If it is only a matter of getting the learner to recognize and identify a job or a problem in firemanship, then the instruction is fairly easy. If it is a matter of developing and understanding and appreciation of an activity in fire fighting, it takes more time and effort on the part of an instructor. When it comes to developing satisfactory doing ability in the learners, no ordinary time-worn procedures are going to be productive of good results. "Dust dry" lectures night after night are time-consuming and interest-killing. The subject must be kept alive and challenging. Approaches and attacks must be varied. Resourcefulness and ingenuity are necessary on the part of a good instructor.

There is a very human side to instructing and learning. Every instructor should study the individuals in his class. By so doing, he gets to know them better. He finds ways of approach which vary with the individual. Learning, of course, is a personalized reaction. People sense and feel a sincere interest in them on the part of any instructor. In such a relationship, the learner acquires his knowledge and skill as "tools" in his hands and with proper encouragement and inspiration is bound to become a better fireman. Mere knowledge and acquired skill alone limit accomplishment; couple them with the will to do and the keen desire to continue to improve, however, and the field of development is unlimited. There should be a personal "lift" to every fireman enrolled in organized instruction in firemanship which takes him far beyond the mere "1, 2, 3" of performing the steps in an ordinary job.

The place in which, or at which, the training is done is far less important than the quality of the instruction offered. Training may be done in a conference room, a classroom, on the apparatus floor, at the drill tower, or in other surroundings appropriate to the activity under consideration. Whatever equipment and materials are required to do the job under actual conditions, similar equipment and materials are necessary to train men to do that job properly. Added to this are the usual well-known simple teaching materials and teaching aids that have proven their worth and value. A good instructor knows what he needs; he makes provision for the necessary teaching equipment and materials because his analysis of the job and his lesson planning reveal such facts to him in advance of class meetings. *The instructor is the most important factor in all instruction.*

Supervision and Follow-up. All too often fireman training ends with the last meeting of the class. From there on the learners are "pushed out of the nest," so to speak, to go forward entirely under their own power. This is a situation that should be corrected. The testing step of the instruction process extends well beyond the classroom and the drill tower. When men get into action is the time to really check on whether they can or cannot do a job in a satisfactory manner.

Officers, especially, make a real contribution to the total fireman training program by observing and reporting to the proper person evidence of the fact that certain men need more training and specifically where the shortcomings are. If provision is made soon thereafter for further instruction, on an individual basis if need be, the fire department will improve rapidly and will continue to grow and improve.

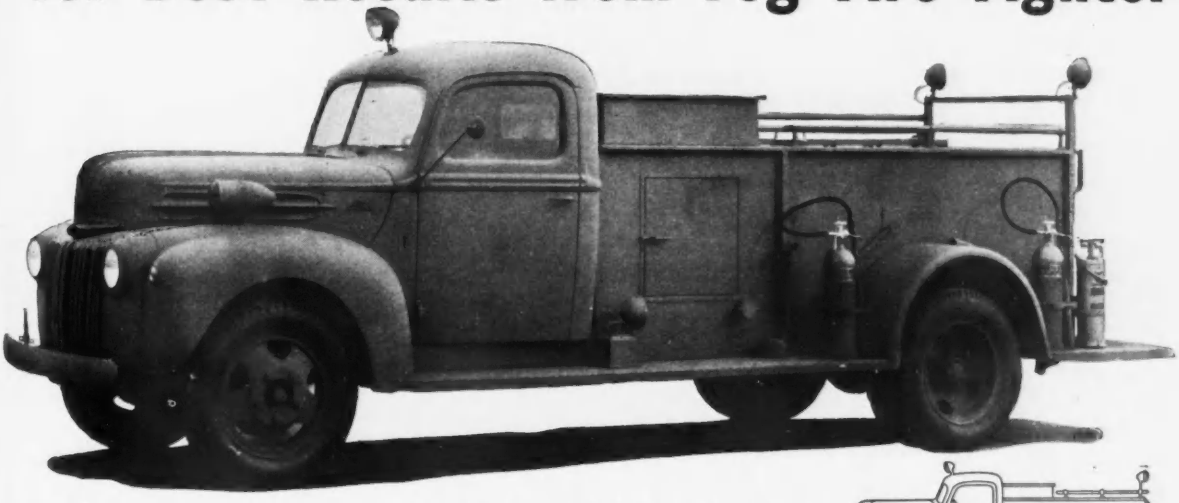
(*Continued on Page 26*)

British Fire Service Invasion Contingent

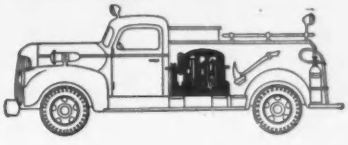
British Information Services

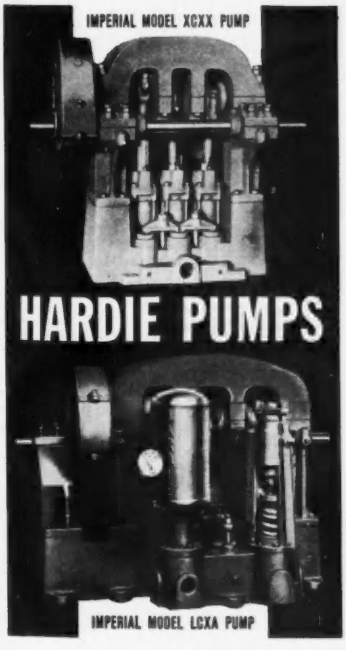
Above are members of the Volunteer Overseas Contingent of the British National Fire Service shown in readiness just before the invasion that was to take them overseas with the Allied Armies to fight fires in the ports, docks and other landing places of the Second Front in support of the Army Fire Service. The firemen, shown in pairs, are wearing the home parade uniform, the fire-fighting kit to be used overseas, and a newly issued uniform with a beret, anklets, and a pack with equipment. The members of the Contingent, all volunteers, remain members of the British National Fire Service, acting under the control of their own officers. From the time of embarkation any part of the Contingent comes under the operational control of the appropriate military authority responsible for fire fighting in the area to which it may be directed. Personal kit will be supplemented by issues of Army equipment. The Contingent will comprise ranks up to and including Divisional Officer and consist of men of high physical standard who are over 19 years of age and will not have reached the age of 41 by the end of this year, or in the case of ranks above company officer. 46.

Specify a HARDIE PUMP
for Best Results from Fog Fire Fighter



Above is shown Great Fog Fire Fighting truck built by General Fire Truck Corporation, Detroit, Mich., for U. S. Army Engineers. Equipped with a Hardie Imperial LCX pump delivering 60 gallons per minute at 800 P.S.I. at the slow speed of 130 RPM.





● Constant, sustained high pressure to overcome all hose friction loss and deliver ample pressure at the nozzle to produce complete and perfect atomization of the water—that is the principle of Fog Fire Fighting which makes the pump such an important part of the Fog Fire Fighter.

For over 40 years Hardie has specialized in the manufacture of vertical crankshaft-driven pumps that have proven their quality in all the fields where such pumps are used. Hardie design and extra strong construction are supplemented by complete lubrication—every moving part, including plungers and plunger cups, runs in a bath of oil. These exclusive design and construction features make a Hardie pump the choice of outstanding builders of Fog Fire Fighters. Made only by The Hardie Mfg. Company, Hudson, Mich., Los Angeles, Calif., Portland, Ore.

Perfected Fog Fire Gun

Single Trigger Control is a feature of the Hardie Fog Fire Gun. Pressure of the fingers on the easy-acting trigger opens the gun and selects the type of stream desired from wide close-up drenching fog spray to long distance stream. The gun closes instantly when pressure on the trigger is released. Strongly built to deliver nozzle pressure of 500 to 1000 P.S.I.

★H★A★R★D★I★E
High Pressure PUMPS AND FOG GUNS for Fog Fire Fighters

1-2-3--OUT!

Fire takes a fast knockout when PLUS-FIFTY DUGAS Dry Chemical comes into the picture. For PLUS-FIFTY DUGAS Dry Chemical brings you fire-stopping power of amazing swiftness, sureness.

As speedily as it strikes flames, PLUS-FIFTY DUGAS Dry Chemical releases a large volume of fire-smothering gases that quickly prevent small fires from becoming big ones. And PLUS-FIFTY DUGAS Dry Chemical is harmless to both men and machines.

PLUS-FIFTY DUGAS Dry Chemical comes to you ready for instant fire-fighting duty. Stays that way, too... won't deteriorate during storage.

Write us today for additional facts, along with priority information regarding DUGAS Fire Extinguishing Equipment.

Approved by Underwriters' Laboratories and Factory Mutual Laboratories.

PLUS-FIFTY
duGas
REG U. S PAT OFF
DRY CHEMICAL
U.S. PATENT 1790409

MODEL 15
HAND EXTINGUISHER

CHART showing characteristics of all types of approved hand fire extinguishers sent FREE on request.

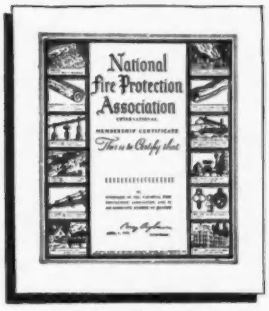
DUGAS ENGINEERING CORP.
OWNED AND OPERATED BY
ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN

MEMBERSHIP REPORT

N. F. P. A. Volunteer Firemen's Section

LAST month 26 Fire departments joined the Volunteer Firemen's Section of the N.F.P.A., bringing the total membership of the section to 1,078 departments, a new high in enrollment.

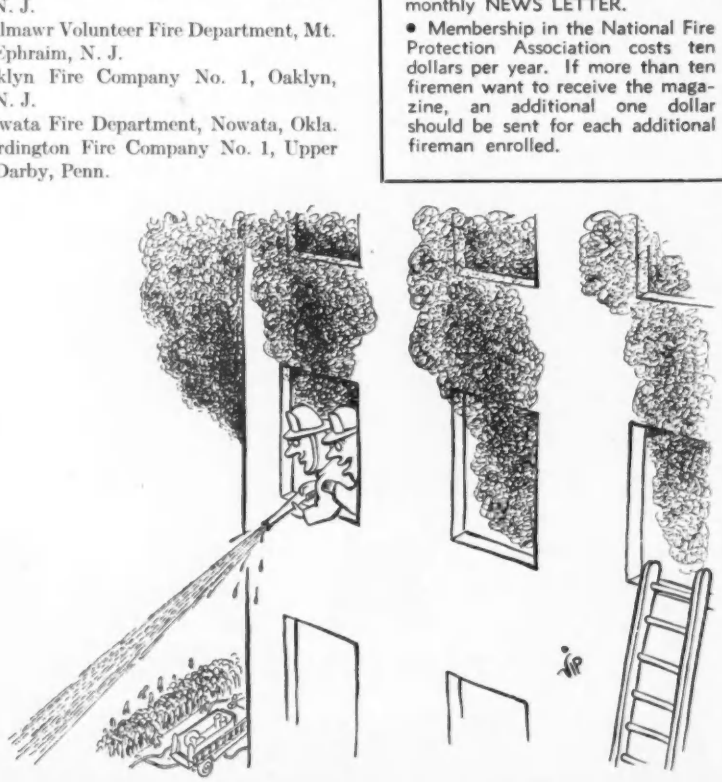
Ceres Fire Department, Ceres, Calif.
Denair Fire Department, Denair, Calif.
Keyes Fire Department, Keyes, Calif.
Salida Fire Department, Salida, Calif.
Turlock Fire Department, Turlock, Calif.
Woodland Avenue Fire Department, Modesto, Calif.
College View Volunteer Fire Department, Denver, Colo.
Lanark Fire Department, Lanark, Ill.
Rock Falls Fire Department, Rock Falls, Ill.
Blackhawk Fire Fighters Association, Sterling, Ill.
Independence Fire Department, Independence, Kans.
Georgetown Fire Department, Georgetown, Mass.
Waterford Township Fire Fighters Association, Pontiac, Mich.
Warren Fire Department, Warren, Minn.
Miles City Fire Department, Miles City, Mont.
Thompson Falls, Volunteer Fire Department, Thompson Falls, Mont.
Engine Co. No. 1, Franklin Fire Department, Franklin, N. H.
Brooklake Fire Company, Brooklake City, N. J.
Bellmawr Volunteer Fire Department, Mt. Ephraim, N. J.
Oaklyn Fire Company No. 1, Oaklyn, N. J.
Nowata Fire Department, Nowata, Okla.
Cardington Fire Company No. 1, Upper Darby, Penn.
Bristol Fire Department, Bristol, R. I.
Greenwood Volunteer Fire Company No. 1, Greenwood, R. I.
Army Air Supply Depot, Memphis, Tenn.
Hartland Fire Department, Hartland, Wis.



Membership certificate illustrating the history of fire protection.

MEMBERSHIP PLAN

- Through the Volunteer Firemen's Section, fire companies may become N.F.P.A. members. Each member fire company has VOLUNTEER FIREMEN magazine sent to the homes of ten men.
- As a member, the fire company receives at headquarters a set of all other regular N.F.P.A. publications. This includes the QUARTERLY MAGAZINE and monthly NEWS LETTER.
- Membership in the National Fire Protection Association costs ten dollars per year. If more than ten firemen want to receive the magazine, an additional one dollar should be sent for each additional fireman enrolled.



COLLIER'S WEEKLY "Now get the guy with the derby" VIRGIL PARTCH

WaterFOG

HELPED NAVY SAVE BLAZING TRANSPORT "WAKEFIELD"

Flown 1,000 miles to perform the greatest fire-fighting achievement in the history of the sea . . . 150 miles off the Canadian Coast . . . Rockwood WaterFOG equipment helped eight Navy firemen subdue a fire that had been raging for 30 hours on the transport U. S. S. Wakefield (former "Manhattan"). Thus our second largest transport, seemingly doomed to certain destruction, was saved for further service.

Navy, Coast Guard, Maritime Commission and Army and hundreds of industrial plants rely on WaterFOG equipment—fixed piping or hose nozzles—to put out oil fires fast. For WaterFOG is man-made fog . . . water broken up into tiny particles by impinging streams of water from specially-designed Rockwood nozzles.

Its fire-fighting principle is simple . . . speed of heat absorption increases with surface area exposed to heat. Rockwood nozzles multiply many times the total surface area of a given volume of water, giving it capacity to cool fires faster. Furthermore, WaterFOG drifts over the liquid (instead of plunging into it), thereby retarding vaporization. Finally, it becomes steam, shutting off air. Thus, it cools, confines, starves the fire.

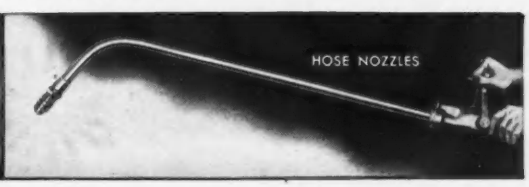
With WaterFOG, less water is needed, saving water and water damage. "Flash-back" is prevented. Electrical fires are controlled with minimum of damage. Rockwood-engineered installations are approved by Underwriters' Laboratories and Associated Factory Mutuals.

Write today for Bulletin 123.

ROCKWOOD SPRINKLER COMPANY
88 Harlow Street, Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



Oil Fire in Shell Plant Nipped by WaterFOG

Under the grating is a 4000-gallon quench tank. Shell casings leaving the hardening furnace are immersed in the oil before reaching the conveyor at the right.

When the oil in that tank caught fire, it took only 9 seconds for WaterFOG to put it out!

The only damage was blistered paint on wood post near the discharge end of the furnace. The quench tank was back in operation shortly after.

One of the WaterFOG heads is shown circled. It is protected by a blow-off cap. Each of the heads is connected by fixed piping to a Deluge Valve which supplies water upon the automatic detection of fire.

On this and many other oil fire hazards, a WaterFOG system of fixed piping, heads, valves, and automatic controls has proved to be the most efficient form of fire protection. Because the spacing of heads, distance between heads and hazard, and other factors are important in determining correct particle size, fog pattern, and velocity, it is recommended that WaterFOG systems be installed by ROCKWOOD engineers (authorities on hydraulics as applied to fire protection).

Typical WaterFOG Applications

- quench and dip tanks
- paint shops
- transformers
- oil switches
- dryers
- oil storage

etc.

Portable WaterFOG Equipment for Regular Fire Hose Lines

The photograph shows Rockwood's SG-40 Nozzle equipped with extension applicator which discharges low-velocity WaterFOG in ball shape.

With the applicator removed and a FOG Tip inserted, this nozzle will discharge either high-velocity WaterFOG with considerable forward projection, or a straight stream for attacking inaccessible places or rooting out deep-seated fires.

The 1½" SG-40 Nozzle takes 4' or 10' applicator; the 2½" size takes 12' applicator.

EXECUTIVES: A colored movie (16 mm.) showing tests of Rockwood WaterFOG is available.

Postwar Use of Radio in the Fire Service

(*Continued from Page 7*)

2. In case of fire or other emergencies to which fire departments respond it is very necessary to depend upon rapid communication facilities, as time is a very important factor.

   It is necessary sometimes upon reaching the scene of a disaster to call for additional assistance to respond to definite locations, for medical assistance, for ambulances, additional pumping units, special tools, gas masks, acetylene cutting equipment, heavy jacks, etc., which are not normally carried as equipment in such quantities to effectively carry on the work. The speed and accuracy with which this equipment can be summoned may be the determining factor on the loss of life. When it is necessary to call upon neighboring communities for Mutual Aid assistance, they must then be kept fully informed of the status of both departments, and the progress being made in handling the emergency, so that anticipated needs can be met.
3. It is also essential to provide adequate communications between the mobile units of a fire department, otherwise, a unit may become lost to the department when it leaves the fire station. If equipped with radios, the dispatcher could direct the unit should conditions change. It is often discovered that incorrect addresses have been given by persons under the stress of excitement, which is discovered after the unit has started on its response. Much valuable time is lost because it is impossible to contact the unit responding incorrectly. Many large fires and the loss of life are the result. If equipped with radios they could quickly be directed to the correct location of the fire.

   It is also very essential to the officers of the battalion, particularly the Chiefs, making it possible for them to be constantly in touch with Fire Alarm Headquarters and the Chief of the department, otherwise, they are handicapped in properly directing the activities of the fire-fighting forces.

   It is also very essential that fire-fighting forces working on fires in large buildings be provided with a channel of communications between the fire and the chief officer in the street, so that additional manpower or other equipment can be called for and dispatched without the necessity of sending foot messengers, who in many cases must travel on foot many flights of stairs to secure these facilities.

   Elevator service is discontinued during fires. It would also facilitate rescue work in cases where entire companies become trapped while fighting a fire. It would also provide facilities for the Chief to order evacuation when conditions become critical, so as not to endanger the life of the men fighting the fire.

The fire service is now dependent upon the police department for the use of radio communications. This has been of invaluable assistance to the fire service, but the time has arrived when the fire service is impairing the Police Communications because of the fact that peak loads occur simultaneously. That is, during large fires and conflagrations when the demands of the Fire Service are the greatest. The demands by the Police are also at its maximum — the result, neither department can make effective use of the service without impairment to the other.

Service

1. Point to point communications is essential and most necessary to the fire service in connection with its Mutual Aid, in providing a channel of communications between cities within a fire district. In many of our rural areas wire facilities are not available, or in many cases toll circuits are so overloaded, or the time required to place such calls make them totally unsuitable for the fire service in reporting fires or calling for assistance needed to meet abnormal conditions during emergencies (see exhibit 1). These areas include in many states a combination of several counties.
2. Fire Alarm Headquarters or station to mobile and portable units and marine, are confined to municipalities.
3. Two-way portable radio communications at the fire grounds between fire-fighting units is very essential because during conflagrations no wire facilities are available between units in large buildings and the chief officers at the street level.

A1. What portion or portions of the spectrum are considered optimum for each type of service?

It is felt that frequencies in the 30 to 40 megacycle band are most desirable for the following types of services:

1. Point to point.
2. Station to station to mobile units and marine service. It is felt that for the two-way communications service at the fire grounds the following band may be desirable:

   4—100 to 200 MCS Band.

A2. In considering channel widths and its relation between the quality of service.

It is felt that a minimum of 2500 cycles would be satisfactory.

B1. What is the minimum number of channels necessary for each type of service?

1. Point to point, within districts, 10 channels for the entire United States.
2. Station to mobile, marine and engine company station, 20 channels for the entire United States.
3. Two-way portable communications at fire grounds between fire-fighting units, 4 channels for the entire United States.

B2. What is the estimated feasible accuracy of setting of the carrier frequency for each service, and how accurately can the carrier frequencies be maintained?

1. Point to point .005%.
2. Station to mobile, etc. .01%.
3. Portable .01%.

C1. What are the widths of any guard bands necessary for each service? No guard bands necessary except on the end bands.

C2. Classify the antenna peak input power considered necessary for each type of service:

1. Point to point. Maximum of 250 watts.
2. Station to mobile units. Maximum of 250 watts — mobile 50 watts.
3. Two-way communication fire grounds. Maximum of 10 watts.

D1. What antenna power gain in decibels in the vertical and horizontal planes is recommended for each type of service?

1. Vertical no gain — point to point.
2. Vertical no gain — station to mobile and portable.
3. Vertical no gain — two-way portable.

D2. What is the maximum number of simultaneously operated stations of each type that are essential in any given area of fire district?

1. Point to point.

   This service will be utilized in the Mutual Aid and for keeping adjacent Fire Alarm Headquarters fully informed as to conditions, as well as all fire stations within a department.

   It is not likely that more than two stations within an area with a radius of approximately 30 miles would be operating simultaneously. The number of stations in the area would vary in different sections.
2. Fire Alarm Headquarters to mobile, portable and marine stations within a municipality.

   Is it not likely that more than one unit would desire to communicate with Fire Alarm Headquarters at any one time?
3. Two-way portable communication at fire grounds:

   It is not likely that more than one unit would wish to communicate at any one time with the Chief Officer at the fire grounds.

D3. Should all channels for the particular service be assigned in a continuous band or should other services be interspersed?

It is felt that channels should be assigned in a continuous band with guard channels on the end of the bands only, for each type of service.

E1. Should more than one grade of service be specified such as primary and secondary?

1. Point to point:

   The Fire District approximately a maximum distance of 30 miles.
2. Station to mobile, portable, marine and station.

   This range will vary depending on the area of the respective municipality, but not in excess of 30 miles.
3. Two-way portable communications at fire grounds not in excess of one mile.

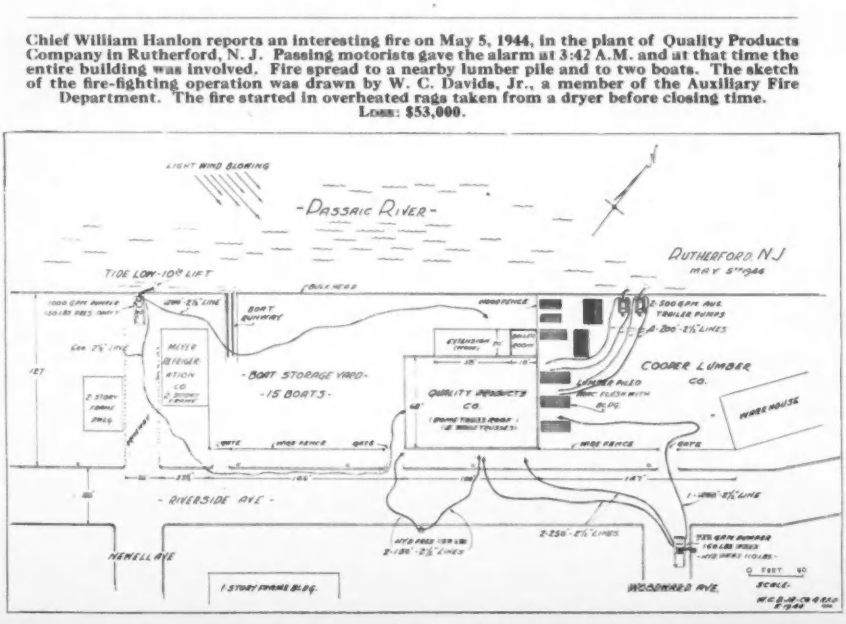
   NOTE: No. 3 would be primarily used in establishing a channel of communications between a fire company in a large building and the street, or at forest fires.

E2. What are the required standards for each service? Ratio to noise level?

These facts are not available at present, however, the following may be of assistance:

1. In point to point communications the noise level would be at a minimum as in a station.
2. Station to mobile, portable and marine same as in existing police service.
3. Two-way portable communications at a fire ground and the noise level would be relatively high, due to conditions encountered at large fires.

Chief William Hanlon reports an interesting fire on May 5, 1944, in the plant of Quality Products Company in Rutherford, N. J. Passing motorists gave the alarm at 3:42 A.M. and at that time the entire building was involved. Fire spread to a nearby lumber pile and to two boats. The sketch of the fire-fighting operation was drawn by W. C. Davids, Jr., a member of the Auxiliary Fire Department. The fire started in overheated rags taken from a dryer before closing time. LOSS: $53,000.



E3. The Fire Service desires to use F.M. [Frequency Modulation] in its radio communications service.
The attached prints will indicate the types of typical areas served by radio communications. It is intended that the national survey now under way will produce typical layouts for each area on a national basis, and also indicate the co-ordination necessary between related services in the Fire Service, such as air ports, forestry and private fire brigades.

THE Chairman of Committee No. 2 called a meeting of the Committee on April 20th–21st at Washington, D. C., at which time the report of April 21, 1944 was approved and forwarded to the Chairman of Panel 13, to be submitted to Panel 1–2 for their consideration.

The committee is now engaged in making a complete national study of the Fire Service to determine its radio needs on a sound engineering basis, and in which mutual aid is being given serious consideration, because the states must be divided into districts, which will be the deciding factor as to the number of frequencies required.

We realize that it is almost an impossible task to decide now if these districts will conform to the mutual aid districts, which are or may be established at some future time, but these can be adjusted to meet the actual conditions.

It must also be remembered that it is impossible to grant every fire department of the nation a frequency, as there would not be sufficient frequencies in the spectrum. We firmly believe that the reason mutual aid districts have not previously been established is because of the limitation of existing communications facilities, and the time element involved in the placing of calls where no municipal circuits can be installed. Radio will eliminate these barriers and provide for rapid effective communications. I am submitting herewith copies of the committee's reports to date. These will give you full details on how it is feasible to operate radio in the Fire Service.

In conclusion, let us remember again that we still must depend on our wire systems, our central station installations to give us the initial alarm and notification of the fire.

As Chairman of Committee No. 2 we ask for your full co-operation in this effort, for we feel sure that by providing adequate emergency communications facilities in the postwar period, we are going to reduce our ever-increasing fire loss. Therefore, keep in mind that communications adequately planned for your fire department, whether volunteer or paid, is just as important as any other phase of your department.

Let us not continue to use any medium just because it happens to be available, and feel that same is adequate. Let us plan now for the future. I am sure the effort

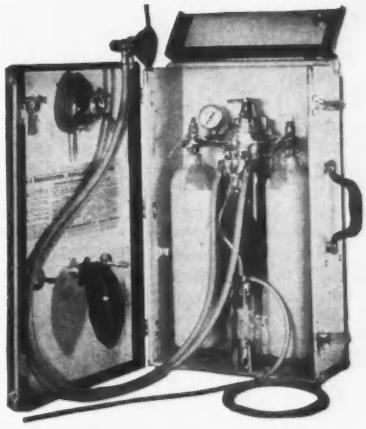
(Continued on Page 24)

E & J RESUSCITATORS USED BY THE LEADERS

★

A huge majority of the outstanding Industrials, Fire Departments and Hospitals are using and recommend this modern automatic breathing machine.

★



E & J GIVES YOU PROVEN MERIT

It is no mere coincidence that the E & J Resuscitator has become the standard equipment in those places where the best only is considered. Behind each E & J is a long record of dependable and successful performance in saving lives in the most desperate cases of Asphyxia. This enviable record is the result of years of specialized experience in making fine Resuscitators. There is no "nearly right" in an E & J product—it has to be right or it isn't an E & J.

NO RESCUE SERVICE IS COMPLETE WITHOUT MECHANICAL RESUSCITATION — WE INVITE YOUR THOROUGH INVESTIGATION OF THE E & J RESUSCITATOR INHALATOR AND ASPIRATOR

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Pioneers and Specialists in Mechanical Artificial Respiration

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Canvas or Rubber Type

FIREMEN'S COAT

Illustrated at right is Midwestern's No. 101 Fireman's coat, which is highly serviceable and popular in both Volunteer Departments and the larger municipal departments throughout the country. Flexible elastic inner sleeve for wrist to keep out water, cold and sparks; adjustable collar strap, detachable wool lining, Midwestern Safety snaps, two outside pockets, 6-inch storm flap and many other fine Midwestern qualities. See your local Midwestern distributor for prices and literature, or write the factory.

MIDWESTERN MFG. CO.
MACKINAW, ILLINOIS

We strive to keep a watchful eye on the future and develop improvements in our INDIAN FIRE PUMPS that will make them continue to stand out all alone as the best fire pumps obtainable.

CLEAR WATER
INDIAN FIRE PUMPS

belong in YOUR department. If you now use them we suggest you check up and see that you have plenty for this summer. If you do not now have INDIAN FIRE PUMPS we urge you to investigate their outstanding advantages. Write for catalog, prices and copies of testimonials.

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PACIFIC COAST BRANCH
Hercules Equipment & Rubber Co.
435 Brannan Street
San Francisco
California

Postwar Use of Radio in the Fire Service

(Continued from Page 23)

will result in great dividends for the department. Just recently we installed radio facilities of the Washington Fire Department in the patrol car of the A.D.T. Company. This has increased the efficiency of this mobile unit, and brings the properties connected to their central station closer to the Fire Department, eliminating again the possibility of the delayed alarm, which, as you N.F.P.A. members know by reading the Quarterly, is the greatest contributing factor to our large industrial fire loss.

The International Municipal Signal Association has also realized the need for immediate relief regarding radio service for the municipal fire departments. It has been successful in having the present rules of the Federal Communications Commission amended to make available the old marine frequencies. Although only three in number, they will somewhat relieve the critical situation, until the Radio Technical Planning Board submits its plans for the postwar application of radio and the redistribution of frequencies. The Committee is now preparing a manual on their proper application and use, which we hope will be made available to you through the medium of this and other associations of the Fire Service.

AT this time I would like to make an announcement. It was not possible to include it in my paper because the Federal Communications Commission has only, as of yesterday afternoon, made it possible for me to make this announcement. The Fire Service of the United States at this time has a "Class F" station and is recognized as being eligible for the use of radio facilities on an equal basis with the police.

The rules governing emergency radio service have been amended. It was approved by the Commission and will be published as of today. It gives me great pleasure to make this announcement here in Philadelphia, because Chief F. O. Schierff, of the Electrical Bureau and Fire Alarm Bureau of Philadelphia, has been my able vice chairman of this committee. It is through his efforts and assistance that it was possible for our committee to convince the Commission of the needs of the fire service.

These rules will be published. This committee is preparing a manual on the use to which you can put these radio frequencies. It will be made available through the medium of this Association and other organizations of the Fire Service.

This again does not mean that every fire department will be able to secure a frequency because we have changed the old marine fire frequencies under the present rule to read "Municipal Fire Station" instead of "Marine Fire Station."

The reason for that was that since 1923 only five cities in the United States have

taken advantage of the three frequencies which the Commission has set up to use. This will not affect their operation, it will broaden their scope, and make it possible for them to use radio facilities between fire alarm headquarters and their mobile units as well as between headquarters and fireboats.

This is a stop gap and will help the fire service in utilizing radio facilities between now and the time this report for the postwar period is made available. In this report we have requested that 20 frequencies be assigned to the fire service, with four in the very high frequency bracket for a medium of communication between tall buildings and the street or other needs as the fire Service may see fit to apply them.

Further, we have also asked that a universal frequency or two be established throughout the United States which will make available a channel of communication between aircraft which might be in trouble, and fire departments; as well as for use at other emergencies.

This frequency will not be used for any purpose except to report emergencies, and fire departments will monitor that frequency. Carriers such as transport planes and railroads will be able to maintain a channel of communication and call for help when needed.

●

Michigan Plans An Outstanding Fire College

DIRECTOR C. A. FISHER, Extension Service, University of Michigan announced that the 16th Annual Fire College will be held at the University of Michigan, July 11th-14th, with headquarters in the Horace H. Rackham School of Graduate Studies.

The Fire College is sponsored by the State Fire Chiefs' Association, State Firemen's Association, and other co-operating organizations. Arnold C. Renner, Chief, State Fire Marshal Division, will make the general introductions.

The program as announced promises to be one of the outstanding and most interesting state fire colleges of the year. Speakers and topics include: Chief Edward F. Curren, of the Underwriters Rating Board, Albany, N. Y., who will demonstrate his extremely interesting "Visual Aids to Firemen's Training"; one of the country's greatest arson investigators, Dr. Richard Steinmetz, of Chicago, will tell of the battle of "The Fireman vs. the Arsonist"; genial Hugh Walker, of American LaFrance Foamite Corp., Elmira, N. Y., will discuss "Postwar Apparatus"; Richard E. Vernor, of the Western Actuarial Bureau, with his latest illustrated commentary entitled "The Mustache Cup"; L. B. Schloemer, of the Army's Sixth Service Command will discuss "Water-fog and Fog-foam" and will give a demonstration at Romulus Army Airfield. Many other equally important topics and "keynote" speakers are on the program. Michigan firemen who attend will find the program of intense interest.

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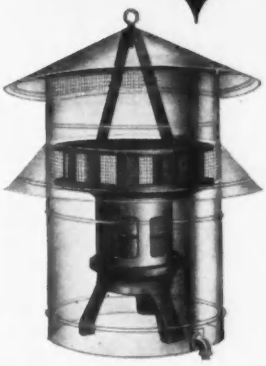

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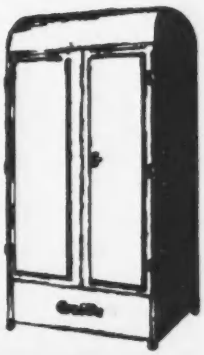
Electrically-operated, the CIRCUL-AIR dries hose in a very few hours — 25 to 50 times faster than a tower or a rack. Makes wartime fire hose last longer. By prolonging the life of hose now in service and, by quick drying, lessening the need for large hose reserve for "reloads" while wet hose is drying, CIRCUL-AIR helps to build up the Nation's rubber stock pile.



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SPORTS CENTER AND ICE ARENA BUILDING, OAK BAY, B. C.

THE above fire destroyed the Sports Center and Ice Arena buildings at Oak Bay, near Victoria, British Columbia. The fire occurred on the evening of April 25th The loss was approximately $143,000 according to Fire Chief E. G. Clayards.

The Sports Center was used by the Canadian Army as a drill and recreation center. The Ice Arena was not in use as the skating season was over. A gas explosion in a dressing room in the Sports Center started the blaze. Investigation by the Provincial Fire Marshal's Office reportedly disclosed a defective valve on a gas heater in the dressing room. Gas filled the room and was exploded by the pilot light on the heater. Sometime previous to the fire, soldiers had replaced a worn gas heater without the help of trained gas fitters.

A military guard gave the alarm over a direct telephone line to the Oak Bay Fire Department. Due to the explosion the fire raced through the Sports Center and burning embers and debris fell on the adjoining Ice Arena starting numerous fires on the tar paper roof. The Arena was also ignited at one end by radiated heat. There was only a 50-foot clearance between the buildings, and plain glass windows in the ends of each building.

Upon arrival the fire department took immediate steps to protect exposures against a conflagration. Eight lines of 2½-inch hose were used and within 10 minutes help had been called from adjacent municipalities and from nearby Army and Navy fire departments. Fire fighters were handicapped by a dead-end 6-inch main, poor hydrant spacing, and low water pressure.

Auxiliary firemen, using their equipment, laid 6,000 feet of 1½-inch hose and patrolled streets adjacent to the fire. Burning brands started 13 spot and roof fires over a half mile area. These were extinguished by the auxiliaries.

Current Aspects of Firemen's Training

(*Continued from Page 18*)

It is the responsibility of a volunteer fire department to be so organized, drilled and maintained that fires will be brought under control as soon as possible after they start. Many cues for the necessary repeat training, as well as supplementary and additional training, can be picked up from close observation of officers and men in action. The efficiency of both the instructor and the learners is checked through systematic follow-up and should be going on, week in and week out, through the years.

Looking Ahead. Firemen's training, like a well-cut precious stone, has numerous facets which correspond to various phases of a total training program. For example, there is the matter of human relations and informing the public on the work of the department — getting the public to know the department, have faith in it, and support it. There are angles in this phase that every member of a volunteer department needs to know. There are cautions to be observed. Then, there is the matter of public appearance, how to make contacts and to maintain good relations with the taxpayers once good will has been established. How many volunteer departments go about these problems in an organized systematic manner?

Training in leadership is something which I think should be included in every school for officers. Certainly those who would lead should know what makes men want to follow. The kind of leadership which depends entirely on rank and the authority that goes with it is not the kind of leadership that gets difficult jobs done satisfactorily, and one that develops men so as to be able to advance and take the places of those above them when the opportunities come. Leadership! What is it? Who can expect to become leaders? How do we go about it to improve if we have the desire? Such training improves men both as firemen and as citizens which is a contribution to the locality.

Basic training — evolutions, handling equipment and apparatus in drill schools— divides itself into that which is (1) initial training for new recruits and (2) more advanced in-service training for improving and upgrading to the skilled fire-fighter level all members of a department. Technical problems involved in fire prevention and fire fighting may be handled separately or partially in conjunction with manipulations.

It should also be borne in mind that the fertile field of training in such subjects as fire prevention, the elimination of fire hazards and inspection work offer great opportunities for further improvement.

The nature of fire work is such that instruction offered should come primarily from experienced firemen who have the ability to teach and train others. This is our source of potential fire instructors. Those who take the instructor training provided should be selected carefully. If possible several persons should be in the process of coming up all the time to assist and replace the trained instructors who are now "carrying the ball."

Due to the manpower shortage we are familiar with the fact that many of you are struggling to keep your understaffed departments in operation against the greatest of odds. Women and high school boys are being used in some instances to bolster company personnel. The problem of maintaining, replacing and securing new equipment and apparatus has been baffling, but the need for training was never

(*Continued on Page 28*)

MORE PROOF!

FMC HIGH-PRESSURE FOG EFFECTIVELY SMOTHERS FLAME

Kent County, Michigan, Fire Department Makes Remarkable Record

201 FIRE RUNS—PROPERTY SAVED, $226,985.00

The first report of the Kent County Fire Department shows how good the FMC Fog Fire Fighter really is. And — it proves that a rural, volunteer fire organization can be operated on an efficient basis.

The Kent County organization was established by a special act of the Legislature and organized with the help of Extension Service. Surveys were made. Meetings were held. And hundreds of volunteer firemen responded.

Then — *five* FMC High-Pressure Fog Fire Fighters were purchased from the John Bean Mfg. Co.

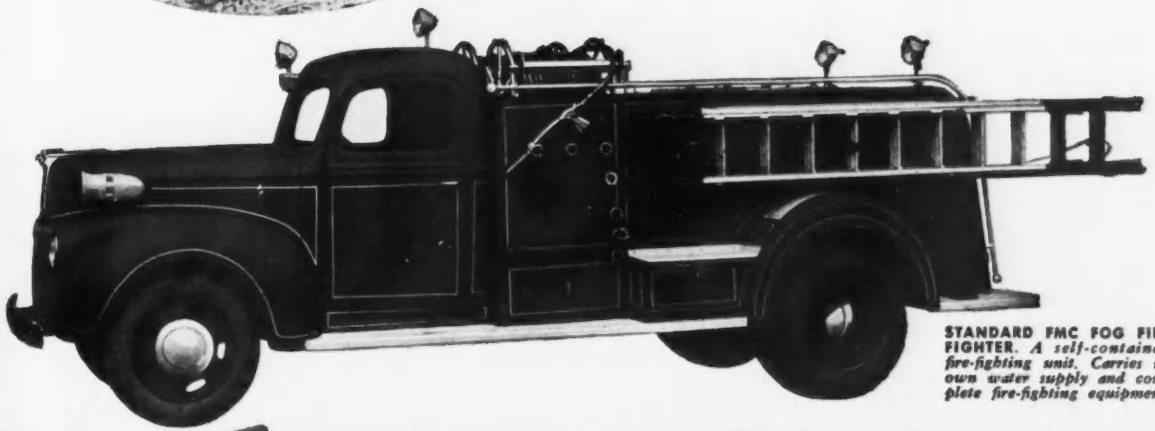
Look at the Record! 201 Rural Runs! Property on Fire Saved—$226,985! Total losses 'way below rural average—only 11!

FIGHT YOUR FIRES THIS MODERN WAY

Fires can be put out faster and with less water with FMC High-Pressure Fog. Why? Because the high pressure gives you a combination of finely-atomized water and high velocity—just what you need to *blast, cool* and *smother* flame.

Investigate! Get the facts about this new and revolutionary fire-fighting technique. Right now—the Armed Forces are taking most of the production of FMC High-Pressure Fog Fire Fighters. But—you should be ready to modernize the moment civilian needs can be met. Start planning — now!

This farm house is typical of the rural structures to be found in Kent County. Many are located far away from adequate water supplies—far away from Low-Pressure Pumpers. As the FMC High-Pressure Fog Fire Fighter travels fast and carries its own water supply, it knocks down a fire in a very few minutes.



STANDARD FMC FOG FIRE FIGHTER. *A self-contained fire-fighting unit. Carries its own water supply and complete fire-fighting equipment.*

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« "Anyway, We're Insured" »

AN N.F.P.A. member writes: "The department got a call one morning this spring for a fire in a building on a large tobacco plantation outside of our territory. While the town has protection in parts, this place was in the outskirts. How many places were called, what calls were official, I don't know. One report was that seven engines showed up. Somebody did good work in the early stages for a big building close to the fire building had gotten well started but was saved. One engine worked from a handy pond.

"What took my eye was the plantation's private equipment, pushed or pulled to a safe distance away from the scene and very obviously not in operating condition (see above — Ed.).

"I couldn't resist writing the plantation that it didn't strike me as adequate and if, after their experience, they would like something which could really throw water, I was in a position to supply them a pumper.

"This was the answer which I received:

" 'Dear Sir:

" 'We acknowledge the fact that our apparatus was inadequate for the occasion that had arisen; but it has proved itself very satisfactory on lesser occasions.

" 'All the property of the . . . . . is covered by fire insurance.

" 'We appreciate your generous offer and in thanking you we remain;

" 'Yours truly'

"The picture shows the local 'apparatus,' safely removed a couple of hundred feet away from the fire. If it ever worked, it must have been long ago. As you can see, it is a straight double chemical on an antique Ford chassis. The thing on top of the chemical tanks is the seat. Henry Ford ought to get it for his museum. I have no grudge against the plantation which relies more on insurance than on the old Ford. How the old thing ever 'proved itself very satisfactory on lesser occasions' passes my understanding."

Current Aspects of Firemen's Training

(Continued from Page 26)

greater and we have learned some valuable lessons from our war experience. Think over the men you have lost in the past two years. Which loss has been most keenly felt, the loss of the trained men or loss of the untrained men?

In every state there is a state board for vocational education and a vocational organization under the leadership of a state director usually located in the capital city. Training assistance is available through this channel. Last year **47,266** firemen were enrolled in vocational training classes in thirty-two states — a part of the public service program.

Attempts are being made in many states this year to reach more of the small fire departments with a satisfactory and regular training program. Several additional fireman trainers have been added to state vocational education staffs in the past eighteen months. More drillmasters now serve as qualified instructors in their own departments than in former years. Too many small departments, however, are still without any sort of training program in operation.

Like a fine automobile, a fireman training program should be "built" — not just "put together." Looking back over the trail already traveled, the results can be analyzed, the mistakes "spotted," and the strong and weak points determined. Looking ahead with faith in the future, profiting by past experience, and keeping in tune with the times, fireman training programs should expand and improve greatly in the next few years. Our conception of firemen's training has broadened; more people are interested in the subject than ever before; the quality of instruction is improving; and the small department is receiving more consideration.

We have already come a long way, much of the progress having taken place in the last twenty-five years, but the goal of adequate training for all volunteer departments is an ever-receding one in which the requirements shift and change with the times. This goal will be met much better in the years to come, for volunteer firemen, especially, have the vision of service in protecting America from that arch-enemy — fire.

M-1 vs. Muck

● Rugged men driving rugged trucks for Uncle Sam plough ahead into jungles and forests, through rivers and over trails that would make even a pack animal think twice. Naturally, a truck crew can expect to have to yell for help every so often.

That's where the M-1 Heavy Wreckers (which we turn out by the hundred under the supervision of the Rochester Ordnance District) come in handy. They have the power, the equipment, and the traction it takes to get other vehicles out of trouble.

With the exception of a restricted amount of much-needed civilian fire apparatus, our Ward LaFrance Truck Division factories are making nothing but military vehicles today. However, our Sales and Engineering Departments will gladly work with you on present rated requirements or fire apparatus of advanced design for postwar delivery.

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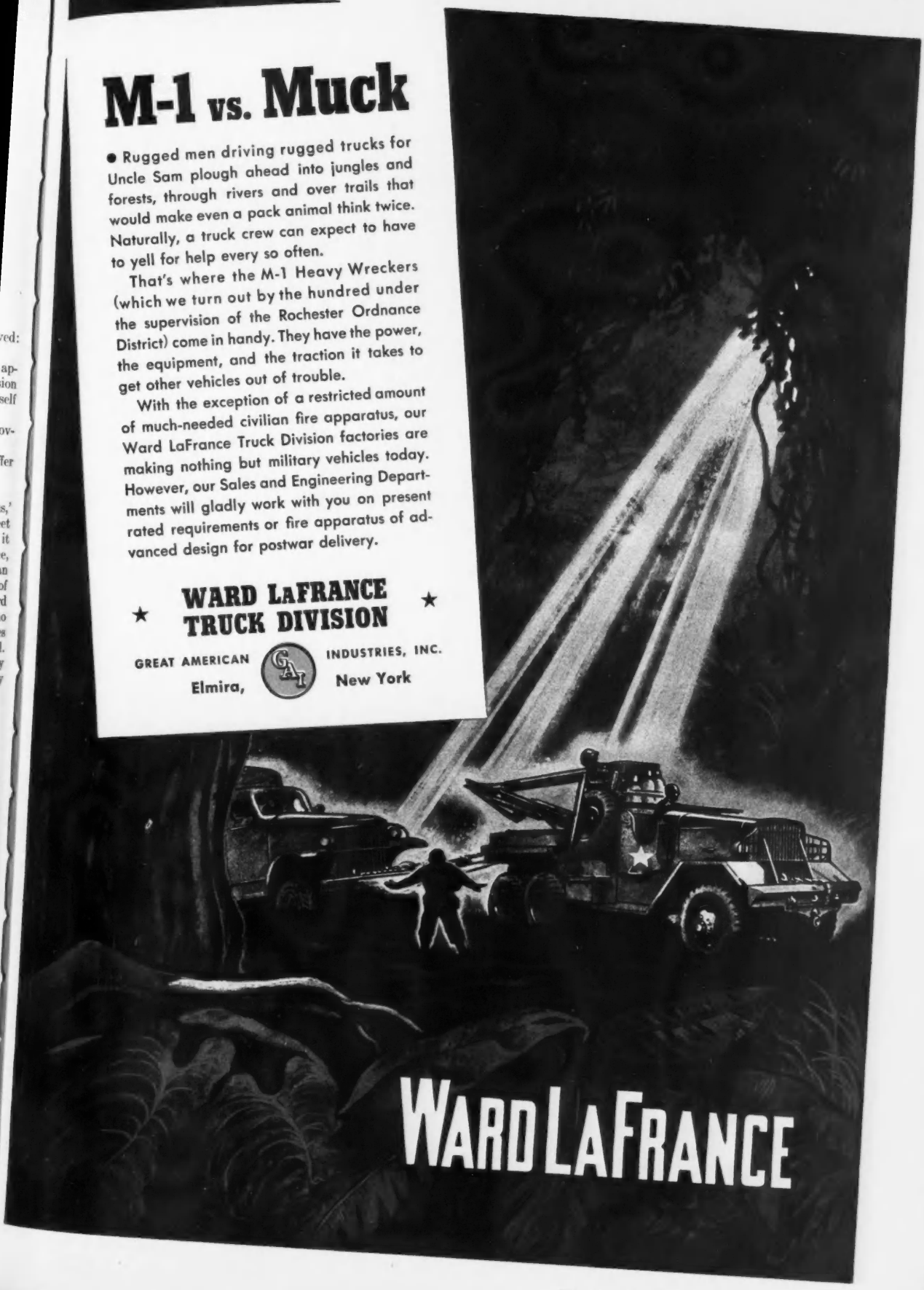
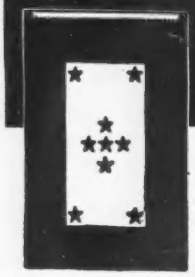


HONOR YOUR SERVICE MEN



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MANUFACTURERS' ANNOUNCEMENTS

THE ALUMINUM LADDER COMPANY, of Worthington, Pa., has been granted allotments of aluminum by the government and is now able to manufacture a limited number of fire department, industrial and household ladders. There will be no priorities required to purchase aluminum ladders but rated orders will receive first consideration.

FIRE in the cargo space of an airplane can now be detected automatically by means of a smoke detector developed by research engineers of the C-O-Two Fire Equipment Company. Any trace of smoke in the cargo space causes the detector to warn the pilot by lighting a red lamp on the instrument panel and sounding an alarm. If the space is protected by a built-in carbon dioxide fire extinguishing system, the pilot simply pulls a lever on the instrument panel, and the space is immediately filled with the gas.

The C-O-Two Aircraft Smoke Detector has a very small and especially lightweight cabinet into which air is constantly forced by a blower or by an exhauster which makes use of the air currents caused by the flight of the plane. Smoke particles in the air stream automatically actuate the mechanism that sounds the alarm and lights the red lamp. After the fire is detected, the alarm is silenced by resetting a switch. The new smoke detector is a development of the C-O-Two company's marine smoke detection systems, which have been in use for many years.

THE N.F.P.A. recently issued a 20-page study on Food Dehydration fire hazards describing the chief food dehydration processes and the principal fire and explosion hazards. The pamphlet also contains a record of several significant fires in food dehydration plants. Single copies sent free to N.F.P.A. members on request. Additional copies available at a cost of 35 cents each.

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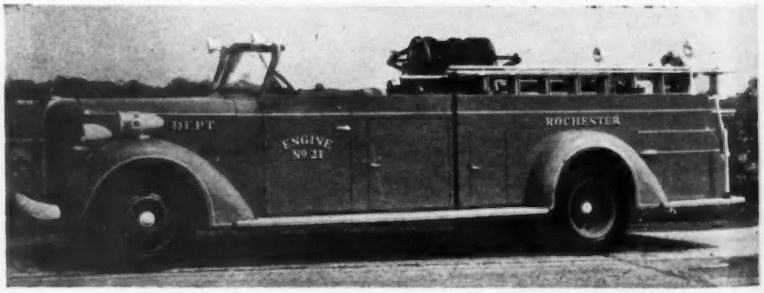
When you write to advertisers, please mention Volunteer Firemen

A DRILL MANUAL OF FIRE DEPARTMENT PROCEDURE, 348 pages, 8½ x 11 inches, has been published and offered for sale by the Los Angeles Firemen's Relief Association, Inc., 644 South Figueroa Street, Los Angeles 14, Calif. The cost of this very comprehensive book is $2.50 postpaid in the United States with a slight extra charge for postage outside of the country.

The manual is remarkable for the excellent use of photographs to show not only all the tools used in the Los Angeles Fire Department but also by showing the proper use of these tools. All basic fire-fighting operations are made clear by carefully staged pictures and are explained in large easy-to-read type. This publication is a "must" item for the library of any progressive department.



This is one of four "Invincible" 750-g.p.m. triple combination pumpers recently delivered to the City of Rochester, N. Y., by the Buffalo Fire Appliance Corporation. These new pumpers have many safety features including complete vision windshields, power brakes, low center of gravity, wide seats to accommodate three or four men, and clean streamlined bodies.

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FREE BOOK HELPS KEEP EXTINGUISHERS READY FOR ACTION

You'll be prepared to nip fires quickly at your plant only if your *extinguishers* are ready. And that calls for periodic examination.

To make it easy for you to set up a maintenance system, Walter Kidde & Company has issued a booklet—"INSPECTION AND MAINTENANCE OF FIRST AID FIRE EXTINGUISHERS." It covers every type of equipment, tells where to locate them, how to mark them for quick identification, what to check, how and when to recharge. It suggests forms for keeping records. Write for your free copy today!

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DON'T LIMIT YOUR TRUCK TO A SINGLE USE WHEN YOU NEED BOTH!

Fog has proven to be highly effective fighting certain classes of fires, but cannot be used to put out all fires. This new, high pressure, patented, Barton-American front mounted pump is the practical solution to the water and fog problem. With this ONE CENTRIFUGAL PUMP, you can have BOTH! You can throw the finest, high-pressure, all-smothering fog one minute and in the next instant, using a regular 1" nozzle, throw 200 gallons per minute at standard fire stream pressures.

Space and weight saved by the front mounted construction makes possible larger booster tanks, additional hose carrying capacity and the carrying of other equipment on your truck.

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EFFECTIVE WITH ANY MAKE OF FOG NOZZLE

This pump will produce effective fog using any of the well-known fog nozzles on the market.

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